

AFAMRL-TR-80-140

① LEVEL II



108277

MULTIPLE EJECTION EFFECTS ANALYSIS

G. A. Freeman
G. R. Casteel

Rockwell International Corporation
North American Aircraft Division
Los Angeles, California 90009
El Segundo

DTIC
ELECTE
DEC 9 1981
S D B

DTIC FILE COPY

AUGUST 1981

Approve for public release; distribution unlimited

AEROSPACE MEDICAL RESEARCH LABORATORY
AEROSPACE MEDICAL DIVISION
AIR FORCE SYSTEMS COMMAND
WRIGHT-PATTERSON AIR FORCE BASE, OHIO

81 12 09 011

NOTICES

When US Government drawings, specifications, or other data are used for any purpose other than a definitely related Government procurement operation, the Government thereby incurs no responsibility nor any obligation whatsoever, and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data, is not to be regarded by implication or otherwise, as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

Please do not request copies of this report from Air Force Aerospace Medical Research Laboratory. Additional copies may be purchased from:

National Technical Information Service
5285 Port Royal Road
Springfield, Virginia 22161

Federal Government agencies and their contractors registered with Defense Documentation Center should direct requests for copies of this report to:

Defense Documentation Center
Cameron Station
Alexandria, Virginia 22314

TECHNICAL REVIEW AND APPROVAL

AFAMRL-TR-80-140

This report has been reviewed by the Office of Public Affairs (PA) and is releasable to the National Technical Information Service (NTIS). At NTIS, it will be available to the general public, including foreign nations.

This technical report has been reviewed and is approved for publication.

FOR THE COMMANDER



HENNING E. VON GIERKE
Director
Biodynamics and Bioengineering Division
Air Force Aerospace Medical Research Laboratory

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM	
1. REPORT NUMBER <u>AFAMRL-TR-80-140</u>	2. GOVT ACCESSION NO. <u>AD-A108277</u>	3. RECIPIENT'S CATALOG NUMBER	
4. TITLE (and Subtitle) MULTIPLE EJECTION EFFECTS ANALYSIS		5. TYPE OF REPORT & PERIOD COVERED Final 8 May - 30 December 1980	
		6. PERFORMING ORG. REPORT NUMBER NA-80-545	
7. AUTHOR(s) G. A. Freeman G. R. Casteel		8. CONTRACT OR GRANT NUMBER(s) F33615-80-C-0519	
9. PERFORMING ORGANIZATION NAME AND ADDRESS Rockwell International Corporation North American Aircraft Division Los Angeles, CA 90009		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS 62202F; 7231-13-11	
11. CONTROLLING OFFICE NAME AND ADDRESS Air Force Aerospace Medical Research Laboratory, Aerospace Medical Division, Air Force Systems Command, Wright-Patterson Air Force Base, Ohio 45433		12. REPORT DATE August 1981	
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		13. NUMBER OF PAGES 93	
		15. SECURITY CLASS. (of this report) Unclassified	
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE N/A	
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release, distribution unlimited.			
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)			
18. SUPPLEMENTARY NOTES			
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) escape system, ejection seats, aerodynamic coefficients, seat/seat proximity, seat/forebody proximity, seat performance, human engineering/ biomechanical, dynamic response index, acceleration radical			
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Wind tunnel data for the ACES-B1 ejection seat in the presence of the B-1 forebody are documented and analyzed. Significant aerodynamic interactions exist at high speed between dual seats and between seat/ forebody. Trajectory data are presented with and without the forebody effect upon the seat. The forebody flow field is shown to increase the human engineering/biomechanical problems during high-speed ejection.			

111411

SUMMARY

This report contains an analysis of wind tunnel data for the ACES-B1 ejection seat in the presence of the B-1 forebody. The analysis is intended to show the importance of aerodynamic interactions at high speed between dual seats and between a single seat and the forebody. Wind tunnel data for single and side-by-side ejection modes are presented in tabulated form. The data are analyzed to determine the effect of separation distance, forebody pitch and yaw, Mach number, seat location and transition, and side-by-side seating. Seat trajectory data were calculated with and without the forebody flow field for a single seat ejecting from the pilot location. Ejection accelerations and angular rates were calculated for ejection conditions of 400, 500, and 600 KEAS at sea level and 600 KEAS at 35,000 feet. The results are analyzed to determine the incremental influence of the forebody on the seat accelerations and angular rates during ejection.

The aero data analysis indicates that the forebody flow field effects are a primary function of separation distance, seat location, and Mach number. The lateral-directional interactions between side-by-side seats were found to be powerful at supersonic speed. The trajectory analysis demonstrated that it would not have been possible to accurately simulate the ACES-B1 seat performance without including the forebody influence at high speed.

Human engineering and biomechanical analysis revealed that the forebody flow field increases the crewman's risk of injury at high speed. This result was found to be related to configuration features that may also be present in future designs.

Accession For		
NTIS GRA&I	<input checked="checked" type="checkbox"/>	
DTIC TAB	<input type="checkbox"/>	
Unannounced	<input type="checkbox"/>	
Justification		
By		
Distribution/		
Availability Codes		
Avail and/or		
Dist	Special	
A		

PREFACE

This final engineering report covers the work performed under contract F33615-80-C-0519 from 8 May to 30 December 1980 under the technical direction of Mr. James W. Brinkley, chief, Biomechanical Protection Branch, Biodynamics and Bioengineering Division of the Aerospace Medical Research Laboratory, Wright-Patterson Air Force Base, Ohio.

The study was conducted by the Aerodynamics Group of Rockwell International Corporation (Rockwell), North American Aircraft Division (NAAD), Los Angeles, California. The performance of the study was under the general direction of Mr. G. R. Casteel, lead aerodynamicist. Work described in this report was performed by the following personnel: Mr. G. R. Casteel and Mr. G. A. Freeman were responsible for the aerodynamic analysis of wind tunnel data and the ACES-B1 simulation, and Mr. R. J. Cummings was responsible for the human engineering/biomedical analysis of the ACES-B1 simulation.

TABLE OF CONTENTS

Section	Page
I INTRODUCTION	8
II WIND TUNNEL INVESTIGATION	10
Test Description	10
Analysis of Data	14
Effect of Separation Distance	14
Aircraft Pitch and Yaw	16
Effect of Mach Number	19
Seat Location and Transition	19
Side-By-Side Seats	26
III MATH MODEL ANALYSIS	33
6-DOF Math Model	33
Effect of Forebody Flow Field	35
Human Engineering/Biomedical Analysis	45
IV CONCLUSIONS	47
APPENDIX ACES-B1/B-1 FOREBODY WIND TUNNEL DATA	48
REFERENCES	89

LIST OF ILLUSTRATIONS

Figure		Page
1	0.1-Scale Ejection Seats/B-1 Forebody Model in Wind Tunnel (Single Seat)	11
2	0.1-Scale Ejection Seats/B-1 Forebody Model in Wind Tunnel (Dual Seats)	12
3	Wind Tunnel Model Installation/and Test Conditions. . . .	13
4	General Arrangement of ACES-B1 Ejection Seats and B-1 Forebody.	15
5	Forebody Pressures Along Centerline, $\alpha_{A/C} = 0$, $\alpha_{A/C} = 0$.	17
6	Effect of Angle of Attack on Longitudinal Coefficients ($M = 0.9$, Left Forward Seat, $\beta = 0$, Aft Transition) . .	18
7	Effect of Angle of Attack on the Lateral-Directional Coefficients ($M = 0.9$, $\beta = 0$, Left Forward Seat, Aft Transition)	20
8	Effect of Angle of Sideslip on Longitudinal Coefficients ($M = 0.9$, Left Forward Seat, $\alpha = 17^\circ$, Aft Transition . .	21
9	Effect of Angle of Sideslip on Lateral-Directional Coefficients ($M = 0.9$, Left Forward Seat, $\alpha = 17^\circ$, Aft Transition)	22
10	Effect of Mach Number on Longitudinal Coefficients ($\beta = 0$, $\alpha = 17^\circ$, Left Forward Seat, Aft Transition) . .	23
11	Effect of Mach Number on Lateral-Directional Coefficients ($\beta = 0$, $\alpha = 17^\circ$, Left Forward Seat, Aft Transition) . .	24
12	Effect of Forward and Aft Seat Location on Longitudinal Coefficients ($M = 0.9$, $\beta = 0$, $\alpha = 17^\circ$, Most Aft Transition.	25
13	Effect of Forward and Aft Seat Location on Lateral- Directional Coefficients ($M = 0.9$, $\beta = 0$, $\alpha = 17^\circ$, Most Aft Transition).	27
14	Effect of Forward and Aft Seat Transition on Longitudinal Coefficients ($M = 0.9$, $\beta = 0$, $\alpha = 17^\circ$, Left Forward Seat.	28
15	Effect of Forward and Aft Seat Transition on Lateral- Directional Coefficients ($M = 0.9$, $\beta = 0$, $\alpha = 17^\circ$, Left Forward Seat)	29
16	Effect of Single- and Dual-Seat Ejection on Longitudinal Coefficients ($M = 1.3$, $\beta = 0$, $\alpha = 17^\circ$, Left Forward Seat Location, Aft Transition).	30
17	Effect of Single- and Dual-Seat Ejection on Lateral- Directional Coefficients ($M = 1.3$, $\beta = 0$, $\alpha = 17^\circ$, Left Forward Seat Location, Aft Transition).	32
18	Aero Equations for ACES-B1 Math Model and Typical Forebody Aero Data.	34

Figure		Page
19	Effect of Forebody Aero Data on Crew Acceleration (400 KEAS at Sea Level, Left Forward Seat).	36
20	Effect of Forebody Aero on Component Accelerations and Angular Rates (400 KEAS at Sea Level, Left Forward Seat).	37
21	Effect of Forebody Aero Data on Crew Acceleration (500 KEAS at Sea Level, Left Forward Seat)	38
22	Effect of Forebody Aero on Component Acceleration and Angular Rates (500 KEAS at Sea Level, Left Forward Seat).	39
23	Effect of Forebody Aero Data on Crew Acceleration (600 KEAS at Sea Level, Left Forward Seat)	40
24	Effect of Forebody Aero on Component Accelerations and Angular Rates (600 KEAS at Sea Level, Left Forward Seat).	41
25	Effect of Forebody Aero Data on Crew Acceleration (600 KEAS at 35,000 ft, Left Forward Seat)	42
26	Effect of Forebody Aero on Component Accelerations and Angular Rates (600 KEAS at 35,000 ft, Left Forward Seat).	43
27	Comparison of Math Model and Sled Test Data	44
28	Forward Crew Location Run Index	48
29	Aft Crew Location Run Index	49
30	Sign Convention for Aerodynamic Coefficients and Angles	50

LIST OF SYMBOLS

C_X	Axial force coefficient = F_X/Qs , through SRP and normal to line-of-seat rollers
C_Y	Side force coefficient = F_Y/Qs , through SRP and normal to seat plane of symmetry
C_Z	Normal force coefficient = F_Z/Qs , through SRP and parallel to line-of-seat rollers
C_m	Pitching moment coefficient = M_m/Qs_l , moment reference center about SRP
C_n	Yawing moment coefficient = M_n/Qs_l , moment reference center about SRP
C_l	Rolling moment coefficient = M_l/Qs_l , moment reference center about SRP
G_X	Acceleration (G) normal to line-of-seat rollers
G_Y	Acceleration (G) normal to seat plane of symmetry
G_Z	Acceleration (G) parallel to line-of-seat rollers
p	Roll rate about axis parallel to X-axis and passing through the seat/man center of gravity
r	Yaw rate about axis parallel to Z-axis and passing through the seat/man center of gravity
q	Pitch rate about axis parallel to Y-axis and passing through the seat/man center of gravity
SD	Separation distance between seat and forebody measured from the bottom roller location at $t = 0$ and normal to the forebody FRL
TD	Transition distance between seat and forebody measured from the 17-degree rail ejection line and parallel to the forebody FRL
$\frac{\Delta p}{Q}$	Pressure coefficient, local pressure minus free-stream static pressure divided by free-stream dynamic pressure

α	Seat angle of attack
β	Seat angle of sideslip
M	Mach number
SRP	Seat reference point
DRI	Dynamic Response Index
$\sqrt{\quad}$	Acceleration radical
KEAS	Knots equivalent airspeed
6-DOF	Six degrees of freedom
Q	Free-stream dynamic pressure
s	Seat reference area
l	Seat reference length

SECTION I

INTRODUCTION

In the past, it has been customary to calculate the ejection seat performance using seat-alone aerodynamic data with rocket on and rocket off. The need to include the aerodynamic effect of seat/aircraft proximity was not recognized. The initial math model used to calculate the ejection seat performance for the B-1 bomber, aircraft 4 (A/C-4), did not include the aerodynamic influence of the aircraft forebody on the seat and did not match the sled test data accurately enough at high speed. After revising the math model to include aerodynamic proximity data, good agreement between math model and sled test was achieved.

The wind tunnel data to define the aerodynamic data due to seat/forebody proximity was obtained in the Rockwell Trisonic Wind Tunnel at subsonic and supersonic speeds. The test was conducted under Air Force contract for the B-1 bomber program. Direction was supplied by the Strategic Systems Program Office (SPO) for the B-1, Wright-Patterson Air Force Base, Ohio. The purpose of this test was to provide data to improve the accuracy of the math model at the earliest time. To this end, the largest proximity effects were formulated in the simplest form. One objective of this report is to conduct a more detailed analysis of the test data than was necessary to support math modeling for the B-1 program.

The crew escape system for the B-1 underwent a series of important changes. Originally, the intent was to use a crew escape module; A/C-1, -2, and -3 were built and flown with one. Subsequently, the decision was made to use ejection seats; A/C-4 was built and flown with one. Despite the considerable difference in geometry between a crew module and an ejection seat, similar high-speed aerodynamic effects were experienced. In both instances, the ejected components experienced incremental lift forces during aircraft separation that increased the total force acting on the crewman at high speed. Further, in both instances, the ejected components, if unstable, experienced large attitude excursions between aircraft separation and drogue line stretch. In the case of the crew module, design changes were eventually adopted to provide a stable system, and the attitude excursions are very mild.

The ejection seat system underwent an important design change because of high-speed aerodynamic characteristics. The original design goal was to eject the crew in pairs to minimize the escape time. It was envisioned that the seat pairs could be dispersed laterally to prevent interaction. However, test and analysis demonstrated that the lateral divergence capability of the ejection seat was not adequate to control the high-speed aerodynamic effects. The final design adopted for A/C-4 consists of ejecting the crewmen in sequence.

In retrospect, the high-speed aerodynamic effects had a greater impact on the B-1 escape system design than was anticipated. Understanding the aerodynamic forces at high speed proved to be a limiting design factor. The high-speed aerodynamic forces have a significant impact on the performance of seat subsystems such as lateral divergence and pitch control. Requirements for the design of such subsystems cannot be properly addressed without understanding the aerodynamic influence of the aircraft flow field on the seat. Finally, the implications of the problem can best be expressed in terms of an injury-potential analysis.

SECTION II

WIND TUNNEL INVESTIGATION

Rockwell acquired wind tunnel data for the ACES-B1 ejection seat in the presence of the B-1 forebody to help formulate a trajectory math model. Two separate series of tests were conducted. The first test series occurred during June 1976 and provided data for a dual, side-by-side ejection. The second test series occurred during February 1977 and provided data for single seats ejected in sequence. Wind tunnel installation pictures for these two tests are presented in Figures 1 and 2.

The purpose of these tests was to define the aerodynamic effects of seat/aircraft proximity only. The proximity increments obtained from these tests were used in conjunction with seat alone data obtained in the AEDC 16-foot wind tunnel. Data for an 0.5-scale model of the ACES-B1 ejection seat with the capability to simulate rocket plumes were obtained during November 1976.

TEST DESCRIPTION

The tests described in this report were conducted in the Rockwell Trisonic Wind Tunnel. Detailed information is contained in References 1, 2, and 3. This wind tunnel is an intermittent blowdown facility capable of operation at Mach numbers from 0.1 to 3.5. The test section is 7 feet wide by 7 feet high, and the basic model support system is a circular sector sting support mounted beneath the tunnel floor. The sector is used to rotate the model about a center of rotation which is fixed in space. The model installation and test conditions are shown in Figure 3.

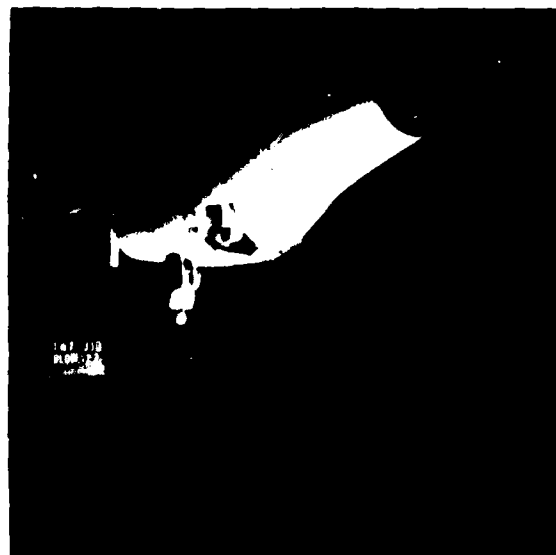
The model consisted of a 0.10-scale representation of the ACES-B1 ejection seat containing a 95th percentile man, plus a B-1 Fuselage Forebody truncated at fuselage station (FS) 500 (full-scale). The interior volume, openings, and bulkheads of the crew compartment were simulated.

Whenever the seat was positioned to simulate the aft crew member, dummy crewmembers were installed in the preejection forward position. Whenever side-by-side seating was simulated, the right crewmember was supported by a separate sting that was parallel to the left sting.

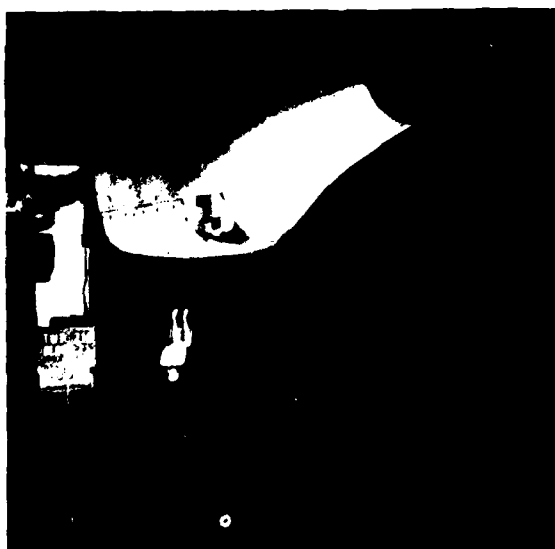
The model was installed in the inverted position so that existing hardware could be used to position the forebody in a way to avoid interference with reflected shock waves at low supersonic Mach numbers. Yaw data were obtained by rolling the entire model assembly 90 degrees and then pitching the support sector.



SD = 2.83 ft



SD = 4.88 ft

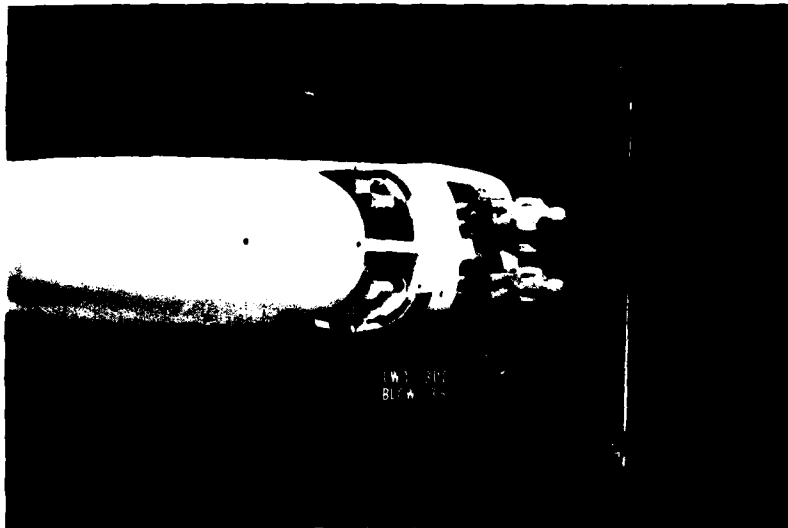


SD = 9.375 ft

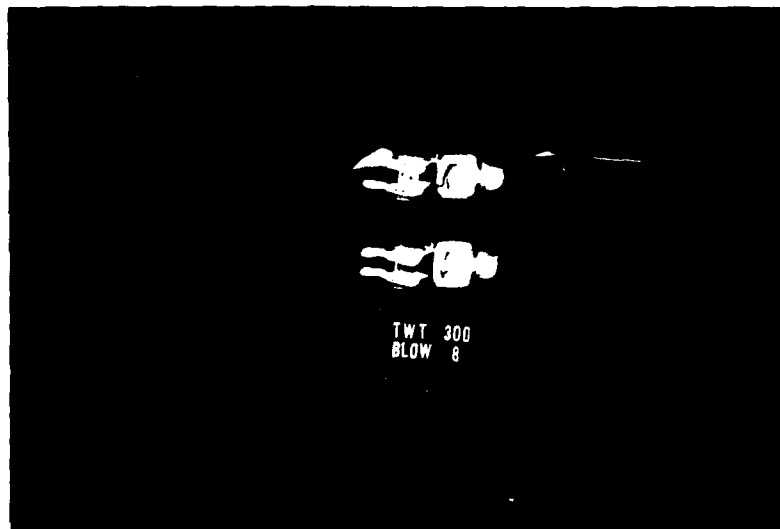


Free air, seat alone

Figure 1. 0.1-Scale Ejection Seats/B-1 Forebody Model
in Wind Tunnel (Single Seat)



SD = 4.88 ft



Free air, seats alone

Figure 2. 0.1-Scale Ejection Seats/B-1 Forebody Model
in Wind Tunnel (Dual Seats)

Test Conditions:

Mach number, 0.60 to 1.50

Seat angle of attack, 12° to 27°

Seat angle of sideslip, -5° to $+10^\circ$

Reynolds number per foot

<u>M</u>	<u>RN $\times 10^{-6}$ / FT</u>
0.60	6.1
0.90	6.2
1.30	7.2
1.50	9.1

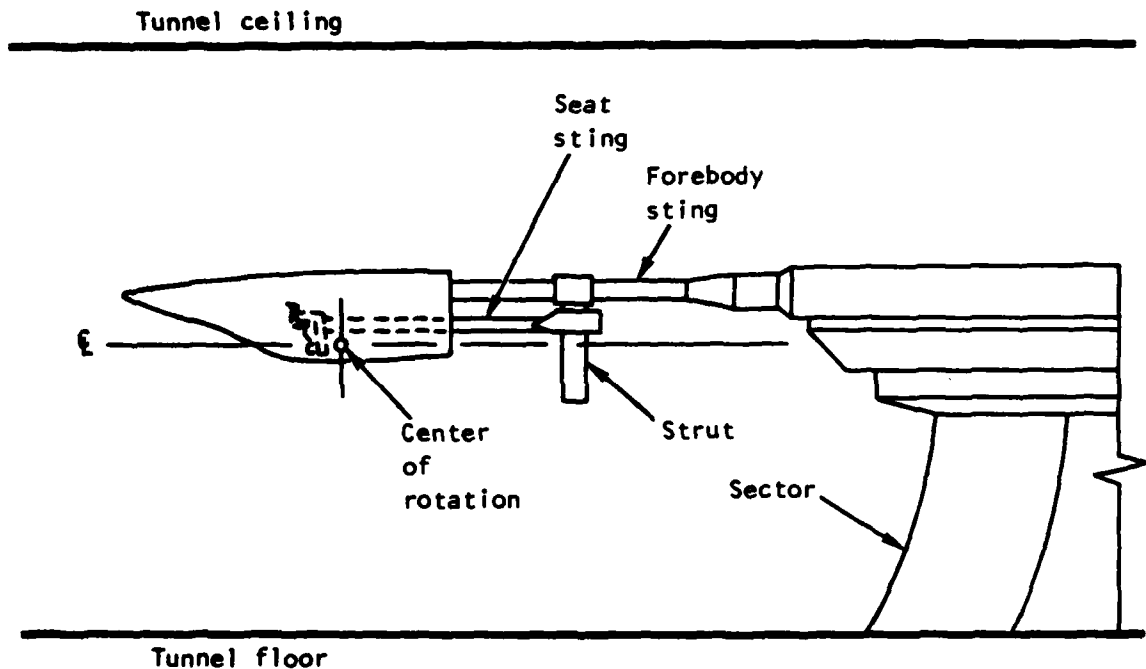


Figure 3. Wind Tunnel Model Installation/And Test Conditions

Six-component force data were measured on the left ejection seat assembly. The seat was supported by a sting and could be adjusted to various fore-and-aft and vertical positions relative to the fuselage. The actual seat/forebody conditions tested are listed in Figures 28 and 29 in the Appendix. Free air data for the seat were obtained by removing the fuselage.

Ejection seat aerodynamic data were recorded in a body axis system consisting of three mutually perpendicular axes (X, Y, Z) that intersect at the seat reference point (SRP). The Z-axis is in the seat plane of symmetry and parallel to the rail centerline as shown in Figure 30. The SRP is the intersection of the compressed seat back tangent plane, compressed seat cushion tangent plane, and plane of symmetry of the seat. The test data were reduced to coefficient form using a reference area that is equal to the projected frontal area of the seat/man combination and a reference length equal to the diameter of a circle whose area is the reference area.

The ejection seat proximity to the fuselage was determined by the separation and transition distances. These distances position the seat bottom roller relative to the forebody. Zero separation distance is the position of the bottom roller prior to ejection initiation with neutral seat adjustment. The separation distance is measured normal to the fuselage reference line. The transition distance is measured forward or aft of the seat 17-degree rail ejection line and parallel to the fuselage reference line. These distances are shown in Figures 28 and 29.

ANALYSIS OF DATA

The aerodynamic forces and moments acting on the ACES-B1 ejection seat in the presence of the B-1 forebody have been analyzed. The influence of the following parameters has been established: separation distance, aircraft pitch and yaw, Mach number, seat location and transition, and dual seat ejection. The plotted data presented are only a small portion of the data analyzed. However, the data presented are judged to be typical of all the data presented in the Appendix.

Effect of Separation Distance

The data are presented in the form of seat aerodynamic coefficients versus separation distance for a given parameter. Seat/forebody interaction is judged to be negligible at a separation distance of 19 feet at all speeds. The data shown at 19 feet are seat-alone data. The general arrangement of the seats and the forebody is shown in Figure 4. The separation distance is also shown to permit the reader to visualize the seat/forebody proximity at different separation distances.

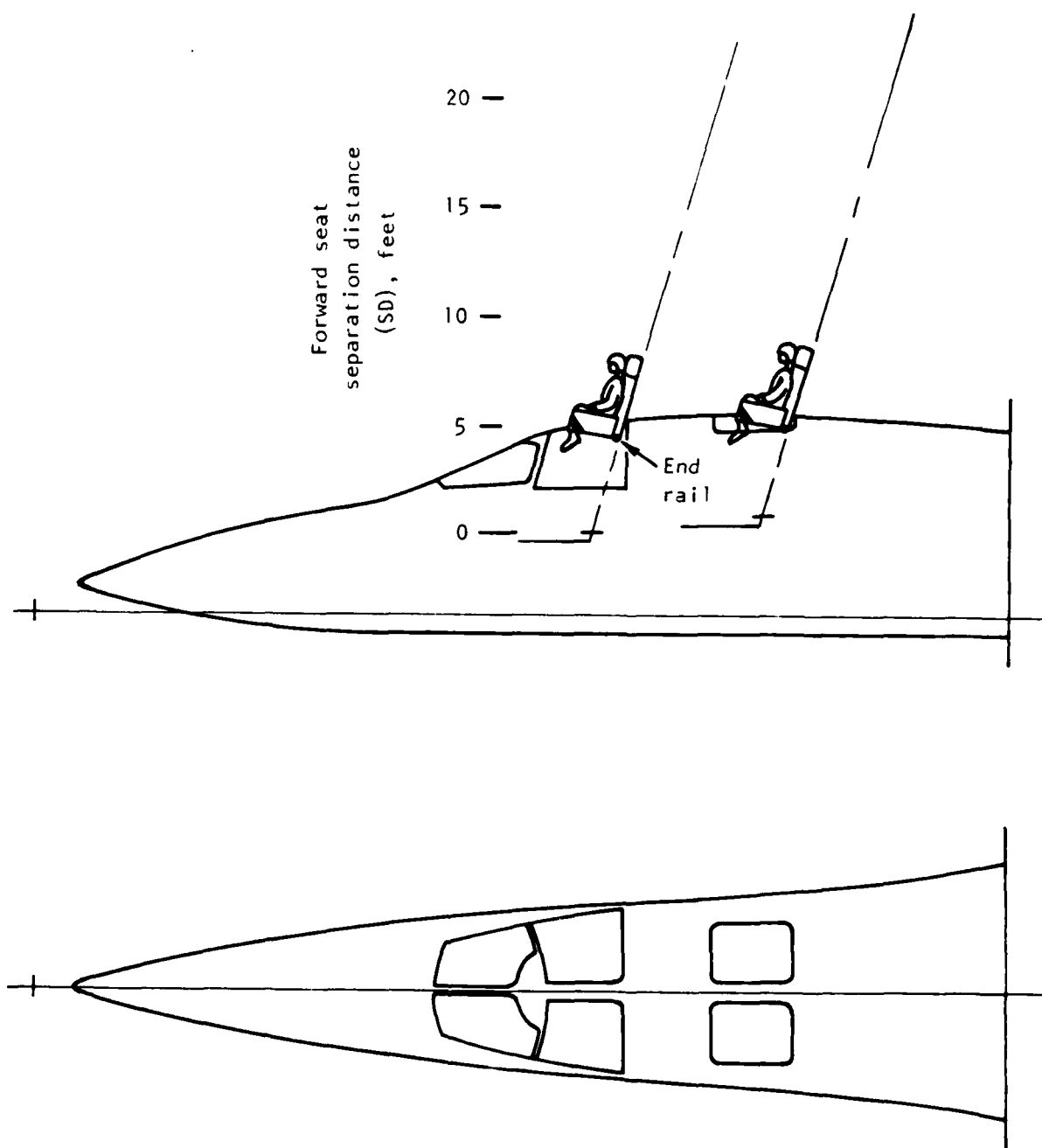


Figure 4. General Arrangement of ACES-B1 Ejection Seats and B-1 Forebody

At any given separation distance, the seat aerodynamic data are influenced by many effects. However, there appears to be several important trends that are present in all of the longitudinal data.

The typical variation of the longitudinal seat data with separation distance is illustrated in Figure 6 by the $\alpha = 17$ -degree case. The force normal to the seat back (C_N) increases with separation distance and approximates the free air value as soon as the seat is clear of the fuselage. The force parallel to the seat back (C_Z) shows a very large upward increase due to the forebody. This forebody influence is significant for separation distances between zero and 6 feet; beyond 6 feet, the forebody influence gradually decreases and appears to be negligible at 19 feet. The pitching moment (C_M) shows a very large noseup increase due to the forebody that reaches a peak near the end of the rail. The large influence of the forebody on C_Z and C_M is very significant. The effect of forebody proximity on C_Z can result in a much larger dynamic response index (DRI) value during high-speed ejection, and the effect of proximity on C_M can reduce the operational envelope of any seat longitudinal stability control system.

The influence of the forebody on C_Z is believed to be primarily due to the windshield. The windshield produces an abrupt change in the flow that creates a large negative pressure field over the region of the escape hatches. This can be seen in Figure 5, which presents pressure data along the forebody centerline for the upper and lower surfaces.

The lateral-directional data do not appear to have any large obvious trends like the longitudinal data. Rather, the lateral-directional trends appear to be controlled by the secondary parameters which will be discussed separately.

Aircraft Pitch and Yaw

The sensitivity of the forces and moments acting on the ejecting seat/man to the angle of attack and angle of sideslip was investigated. The data are presented for seat angle of attack, but the forebody flow field changes with airplane angle of attack. There is a fixed 17-degree difference between airplane and seat angle of attack. The seat aerodynamic axes and the ejection rails are parallel and are tilted backward 17 degrees relative to the aircraft reference system. The seat angle of attack is 17 degrees larger than the forebody angle of attack.

Typical seat longitudinal data are presented in Figure 6 for seat angles of attack of 12, 17, and 22 degrees. These seat angles correspond to forebody angle of attack of -5, 0, and +5 degrees. The incremental contribution due to the forebody is approximately the same over the angle of attack range investigated. The shift in the data in Figure 6 is due mainly to the contribution of the seat-alone data.

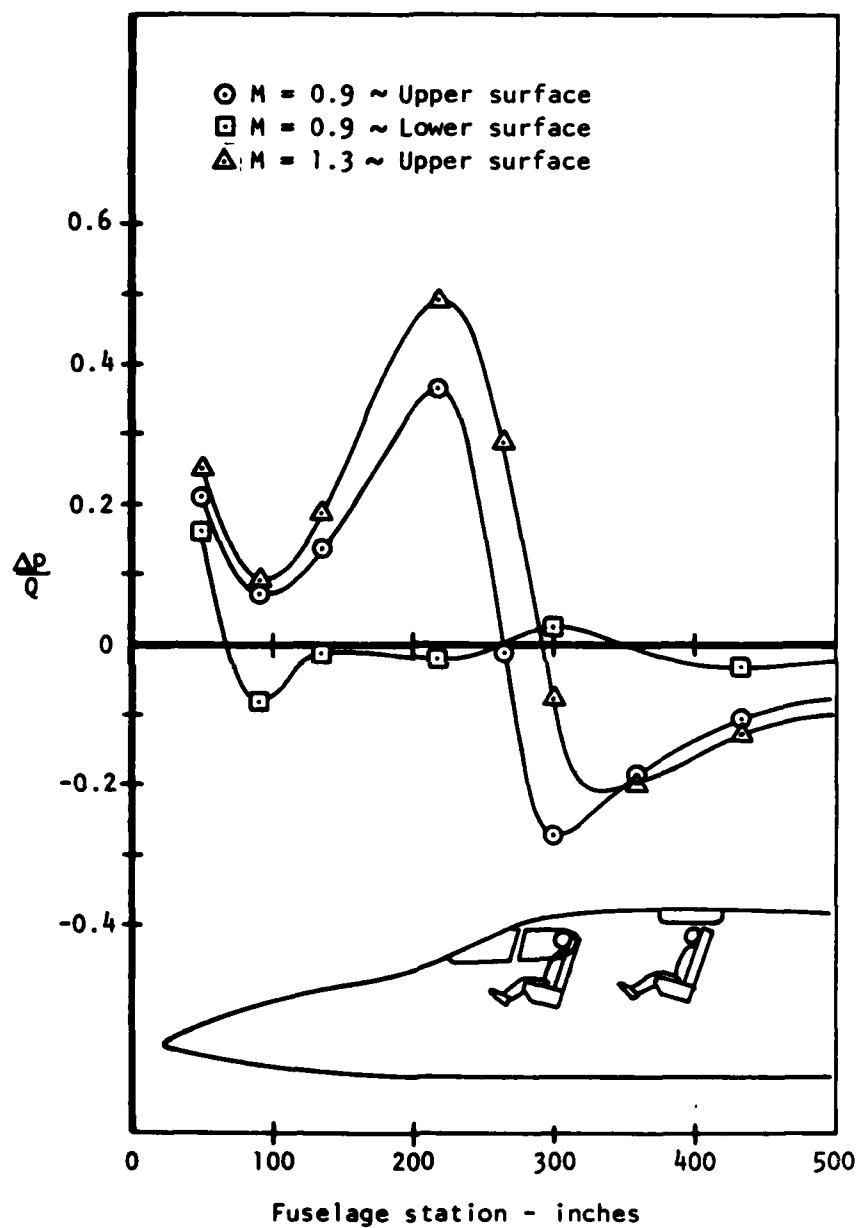


Figure 5. Forebody Pressures Along Centerline,
 $\alpha_{A/C} = 0$, $\beta_{A/C} = 0$

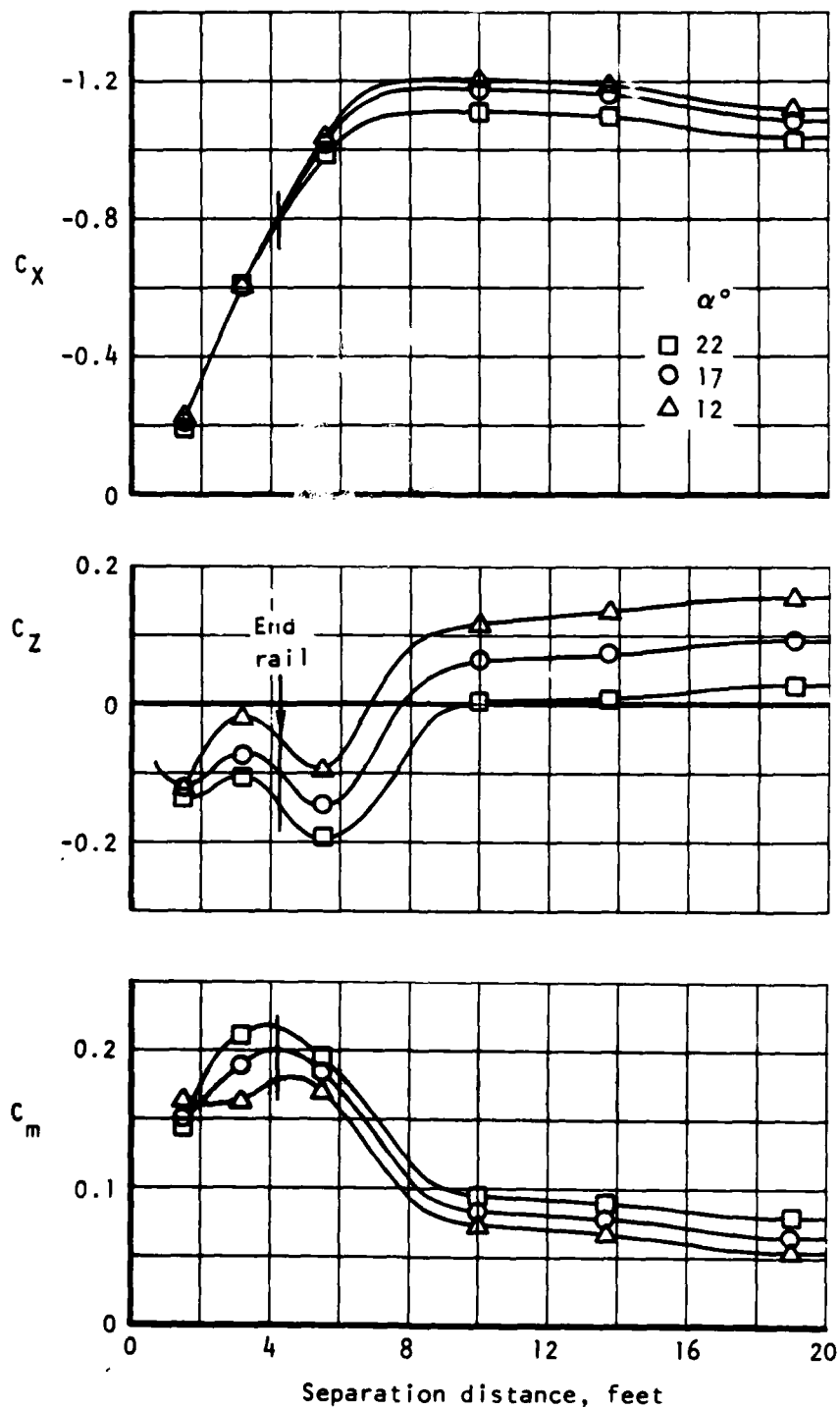


Figure 6. Effect of Angle of Attack on Longitudinal Coefficients
($M = 0.9$, Left Forward Seat, $\beta = 0$, Aft Transition)

Typical lateral-directional data for the left forward seat at zero sideslip is presented in Figure 7 for angles of attack of 12, 17, and 22 degrees. The incremental contribution due to the forebody is dependent on the angle of attack. The largest influence occurs just after seat/rail separation.

Typical seat longitudinal data are shown in Figure 8 for angles of sideslip of zero and 5 degrees. It can be seen that the sideslip angle has a negligible influence on the data.

Typical lateral-directional data for the left forward seat at a 17-degree angle of attack are presented in Figure 9 for angles of sideslip of zero and 5 degrees. The incremental contribution due to the forebody is dependent on the angle of sideslip. The forebody effect on the seat data is larger with sideslip than without sideslip.

Effect of Mach Number

Longitudinal data for the left forward seat are presented in Figure 10 for Mach 0.6, 0.9, and 1.3. The influence of the forebody shows a common trend versus separation distance for all Mach numbers. In particular, the large influence on C_z and C_M appears to be present at subsonic and supersonic speeds.

Lateral-directional data for the left forward seat are shown in Figure 11 for mach 0.6, 0.9, and 1.3. There appears to be a definite effect of Mach number that varies with separation distance. The greatest effect occurs just after seat/rail separation.

Seat Location and Transition

There are four seat locations, one for each crewman. (See Figure 4.) The distance between the forward and aft seat locations is about 8 feet. The influence of the forebody flow field at the forward and aft crew stations was investigated.

Typical longitudinal data for the forward and aft seats on the left side of the forebody are shown in Figure 12. The incremental contribution due to the forebody is approximately the same for both locations. The largest difference occurs for the pitching moment prior to seat/rail separation. The similarity of the data for the two locations appears to be due to the similarity in the forebody pressures over all hatches. (See Figure 5.)

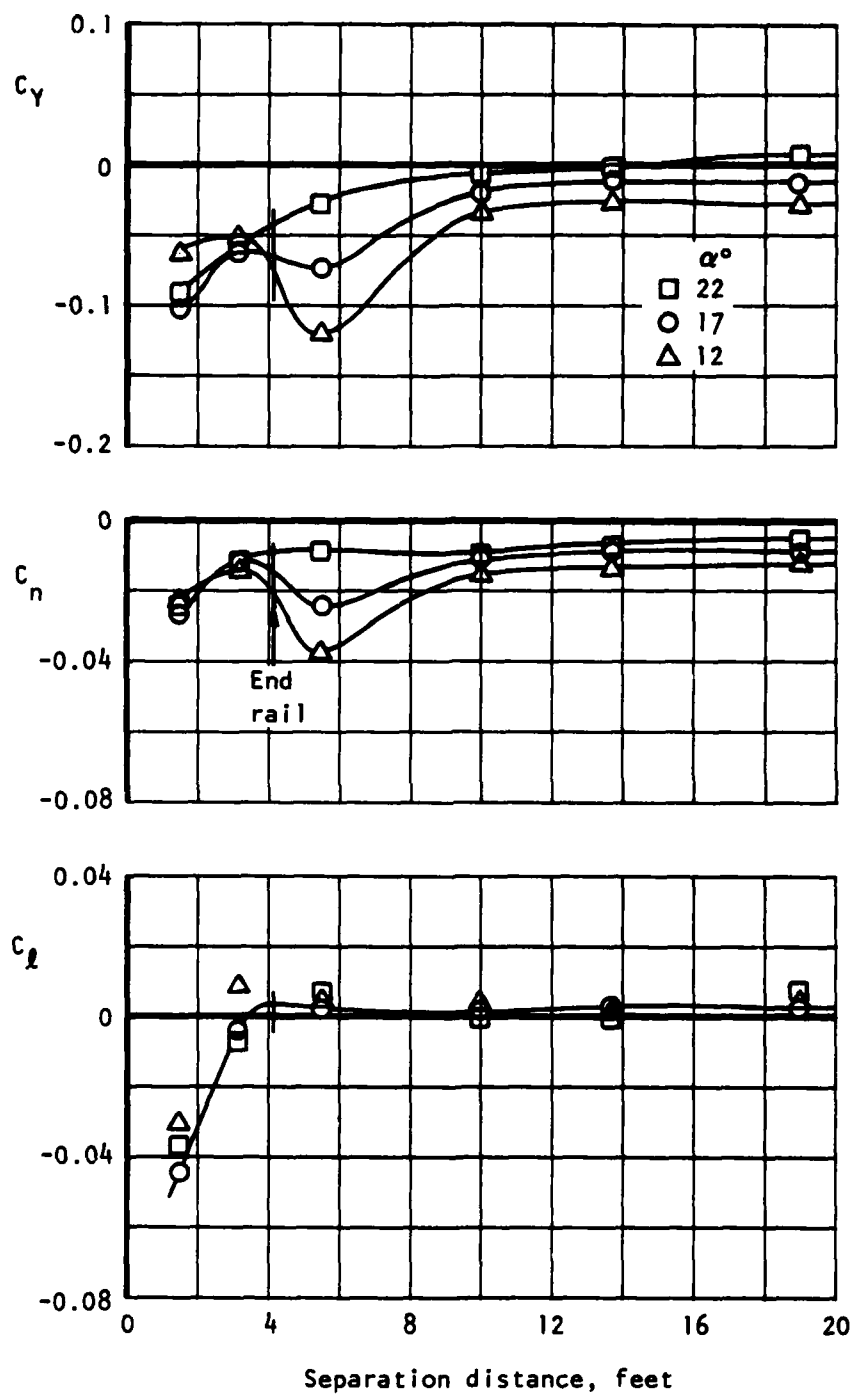


Figure 7. Effect of Angle of Attack on the Lateral-Directional Coefficients ($M = 0.9$, $\beta = 0$, Left Forward Seat, Aft Transition)

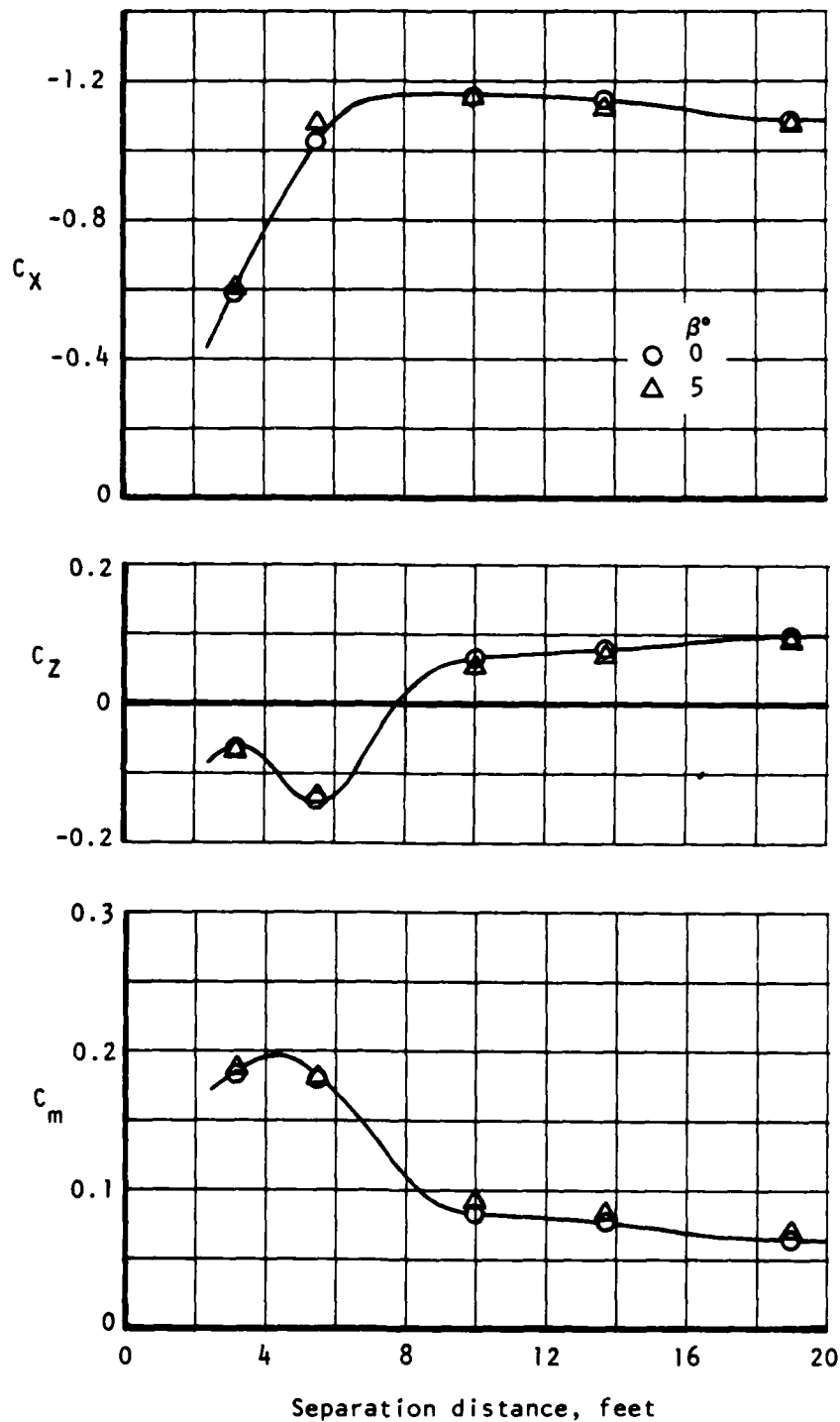


Figure 8. Effect of Angle of Sideslip on Longitudinal Coefficients
($M = 0.9$, Left Forward Seat, $\alpha = 17^\circ$, Aft Transition)

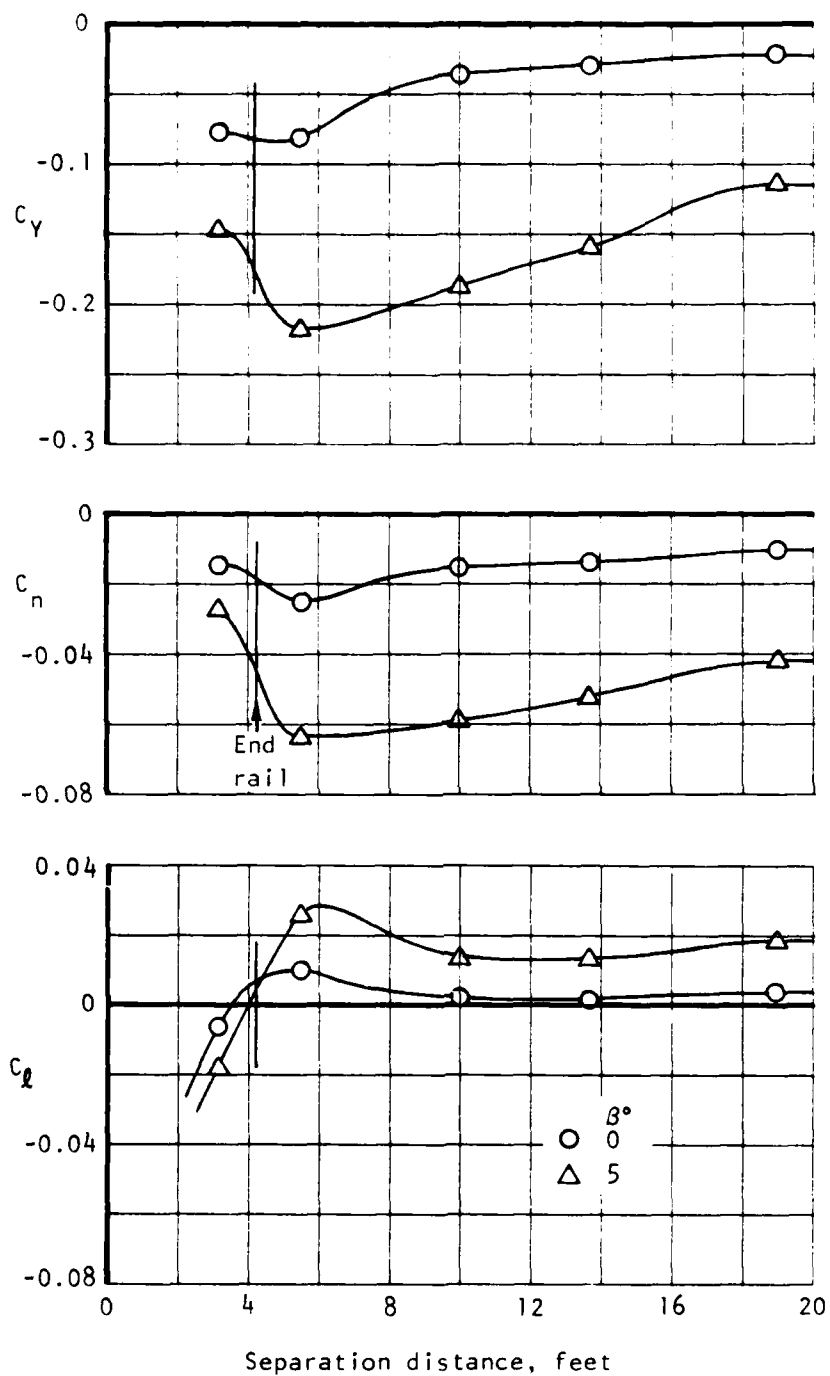


Figure 9. Effect of Angle of Sideslip on Lateral-Directional Coefficients ($M = 0.9$, Left Forward Seat, $\alpha = 1^\circ$, Aft Transition)

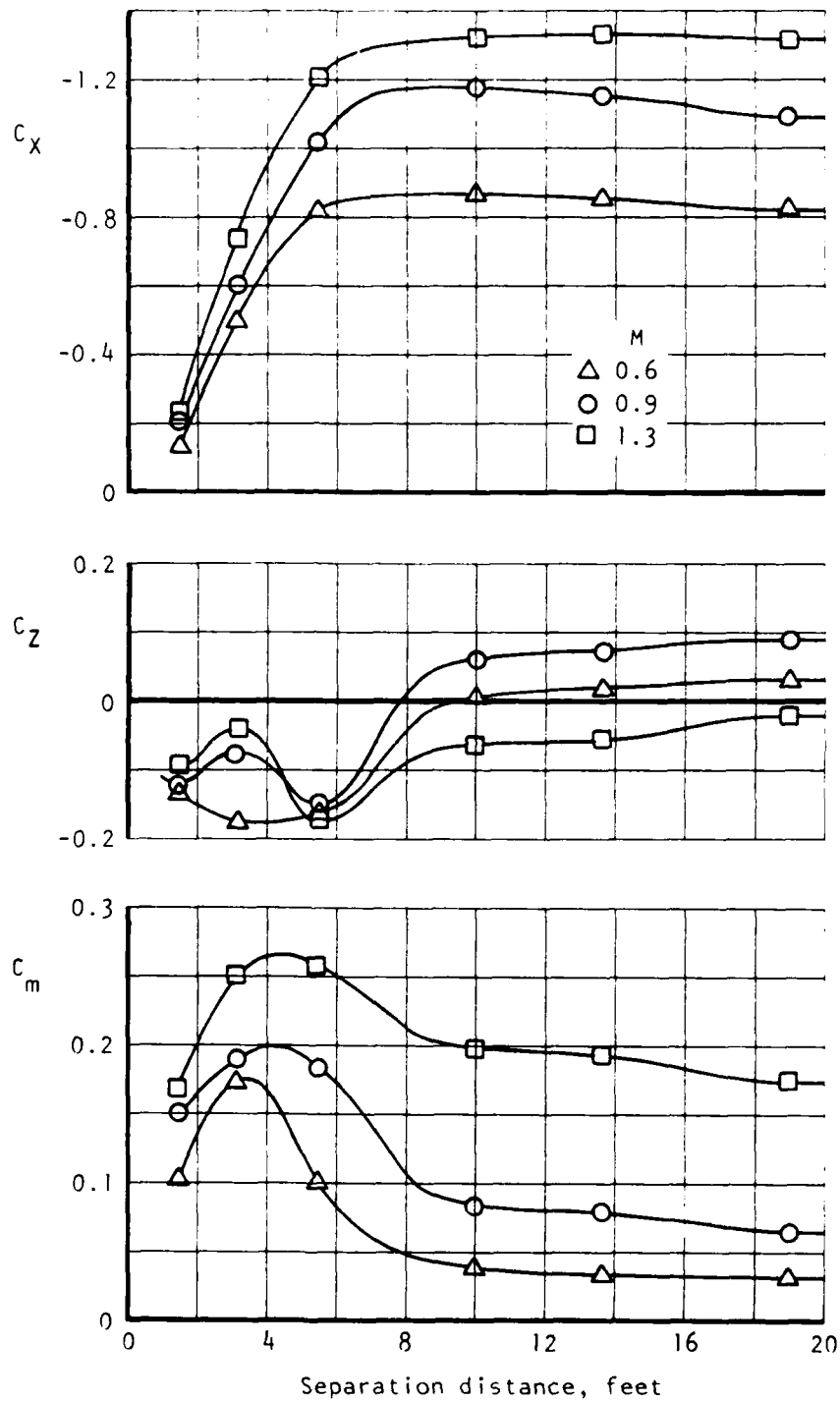


Figure 10. Effect of Mach Number on Longitudinal Coefficients
 ($\beta = 0$, $\alpha = 1^\circ$, Left Forward Seat, Aft Transition)

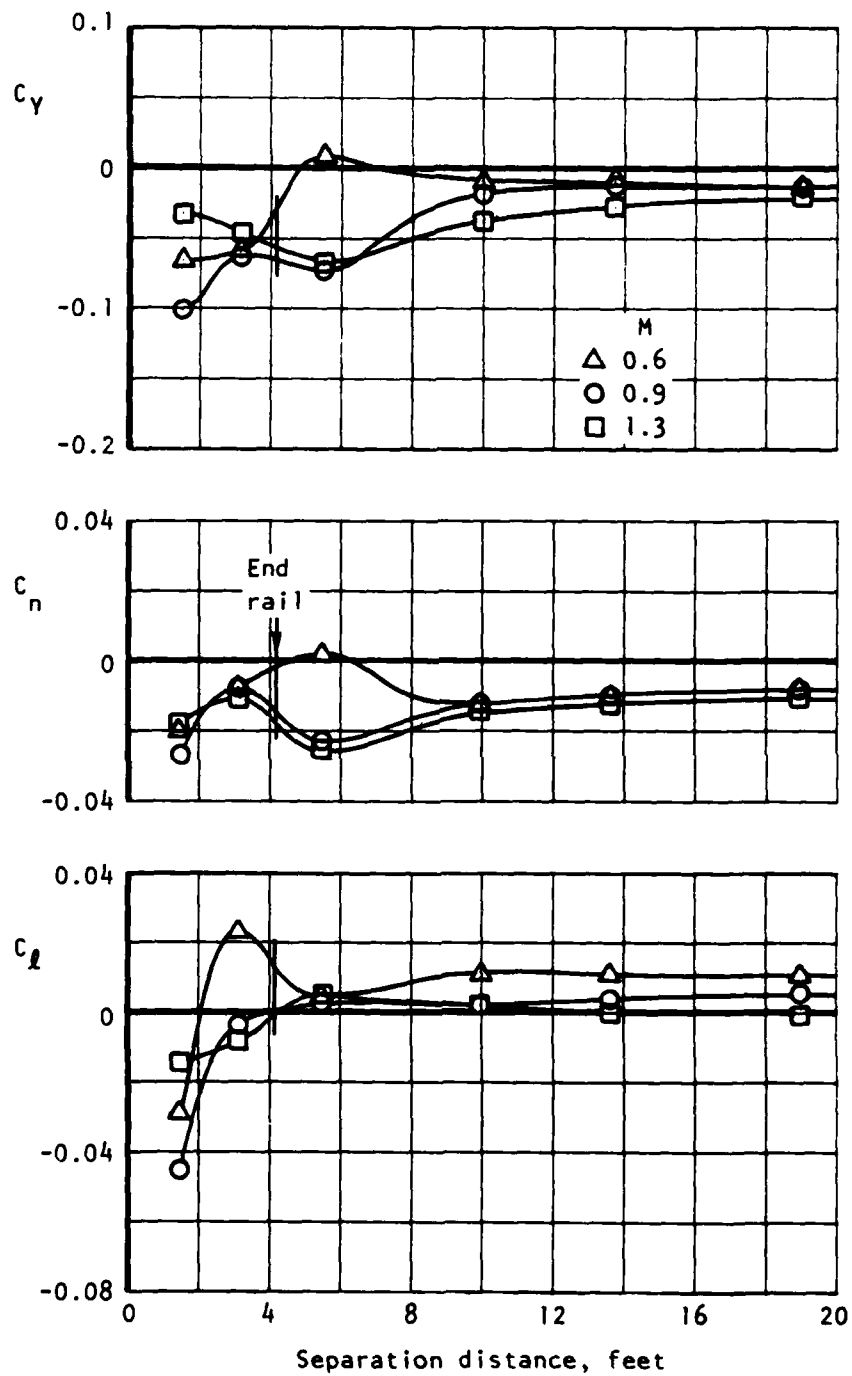


Figure 11. Effect of Mach Number on Lateral-Directional Coefficients ($\beta = 0$, $\alpha = 17^\circ$, Left Forward Seat, Aft Transition)

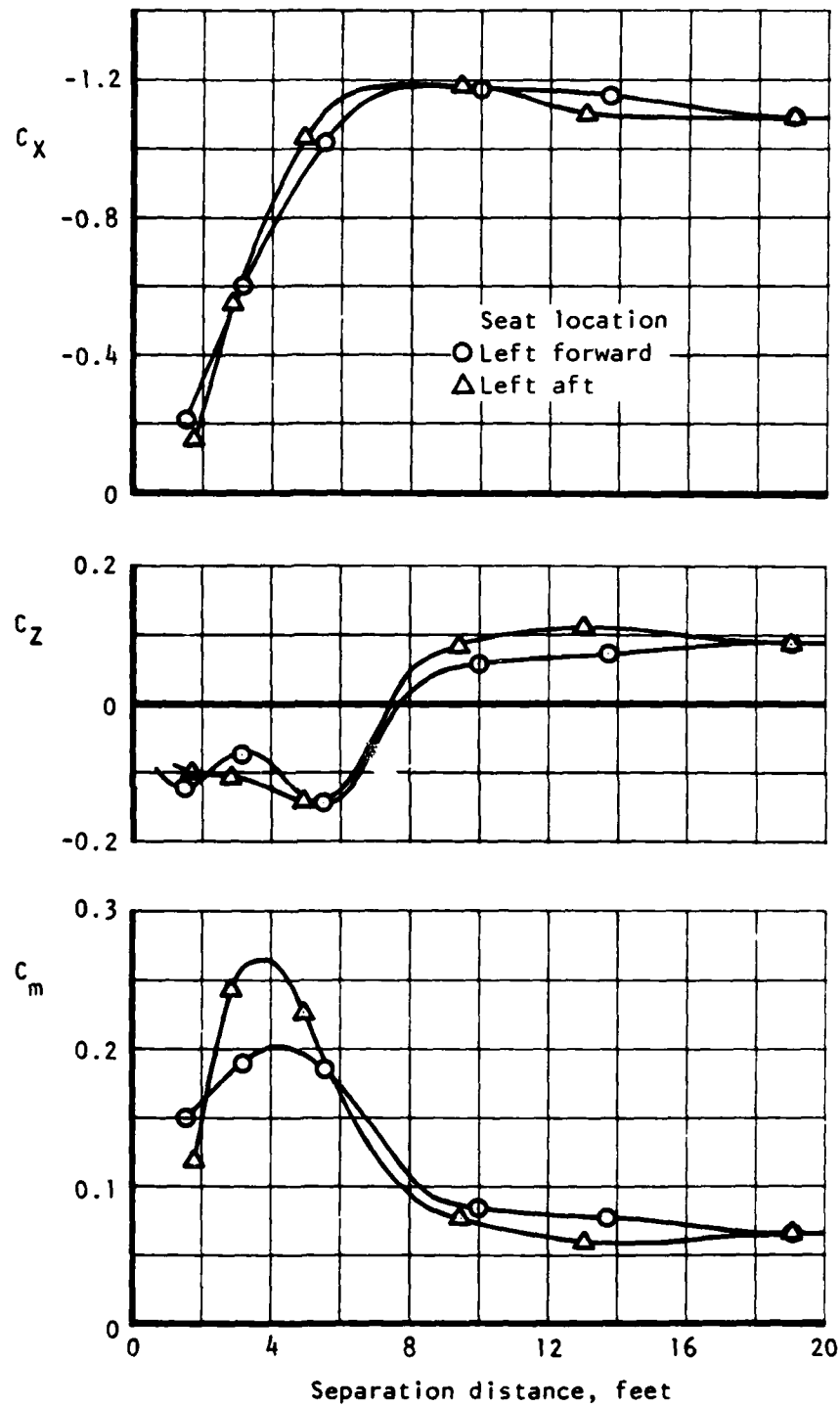


Figure 12. Effect of Forward and Aft Seat Location on Longitudinal Coefficients ($M = 0.9$, $\beta = 0$, $\alpha = 17^\circ$, Most Aft Transition)

Typical lateral-directional data for the forward and aft seats on the left side of the forebody are presented in Figure 13. It can be seen that the contribution due to the forebody varies with seat location. The differences are judged to be due to hatch geometry. Consider the way in which the side force (C_y) varies with separation distance. The aft seat data show very little influence due to the forebody. The aft seat ejects through an overhead hatch, and the aerodynamic environment is similar on both sides of the seat. However, the forward seat data are influenced by the forebody. The forward seat ejects through a hatch that is open overhead and along one side, and the aerodynamic environment is not the same on both sides of the seat. The differences in hatch geometry are judged to be the reason for the strong influence of seat location on the lateral-directional data.

After leaving the rails, the seat will transition forward or aft by some distance which depends on the flight condition. At low speed, the rockets move the seat forward of the 17-degree rail ejection line, and at high speed, the aerodynamic drag moves the seat aft of this line. This forward and aft transition places the seat in slightly different regions of the forebody flow field at any given separation distance. The influence of transition distance (TD) was determined by wind tunnel test. A spread of TD's was tested at several separation distances which are representative of actual distances for the ACES-B1 seat. The values tested are indicated in the run index in Figures 28 and 29.

The effect of seat transition distance is shown in Figure 14 for the longitudinal data and in Figure 15 for the lateral-directional data. In all instances, the contribution of transition distance is small. At small separation distances where the forebody flow field is strong, the transition distances are small. Conversely, at large separation distances where the transition distances are large, the forebody flow field is weak.

Side-By-Side Seats

When two seats are ejected simultaneously, side-by-side, there are two proximity effects to be accounted for: the forebody flow field, plus the flow field of the adjacent seat. Wind tunnel data were obtained for both single and dual seat ejection. The actual cases tested are listed in Figures 28 and 29. In general, it was found that the seat/seat proximity effects are much larger at supersonic speeds than at subsonic speeds.

A comparison between single and dual seat ejection for the longitudinal data is presented in Figure 16. The conditions for this comparison are left forward seat location, aft transition, $M = 1.3$, $\alpha = 17^\circ$, $\beta = 0$. The influence of the forebody is very similar in both instances. The contribution of the adjacent seat is reflected in the data obtained without the forebody (shown at $SD = 19$ feet in Figure 16). With the two seats, side-by-side,

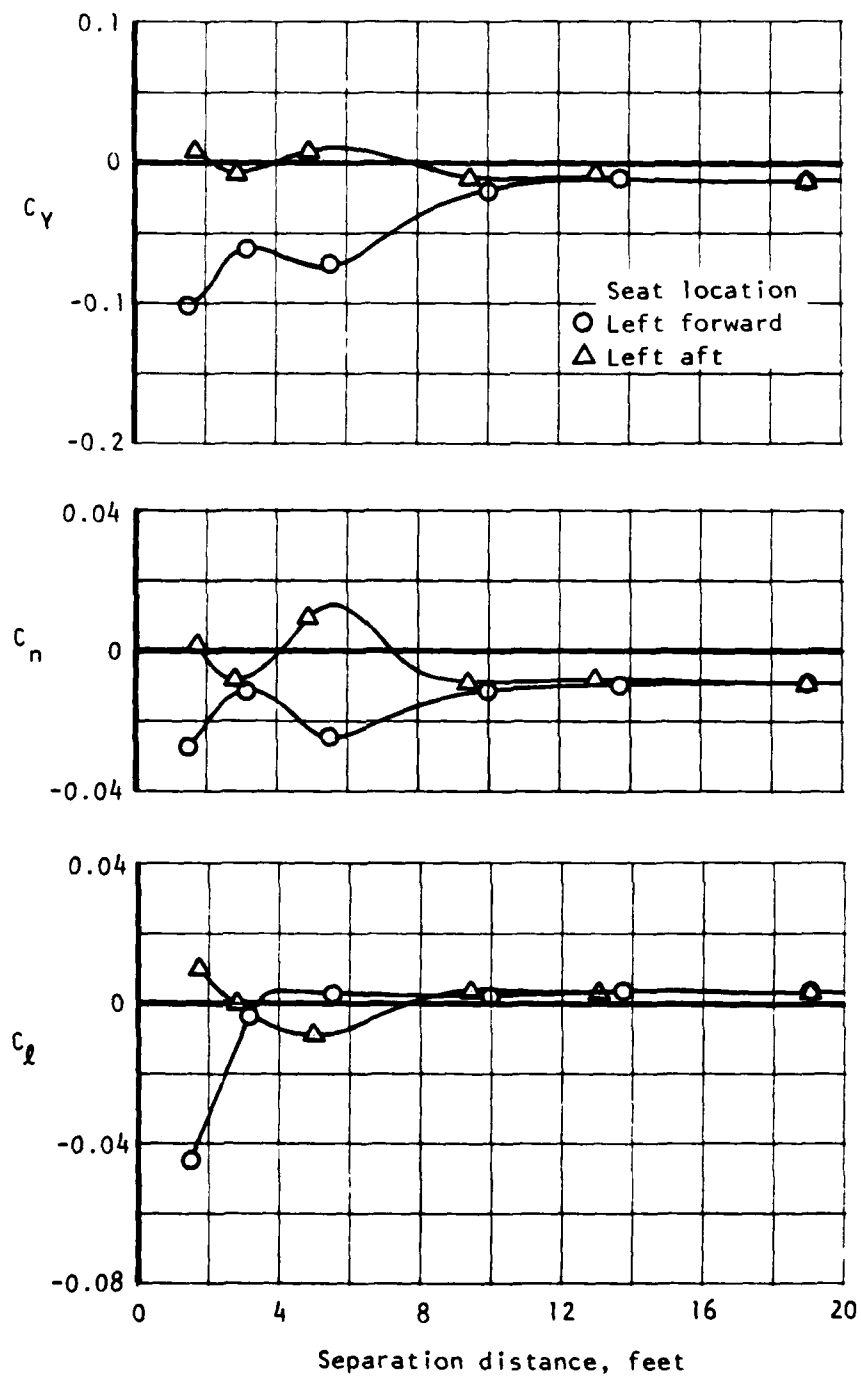


Figure 13. Effect of Forward and Aft Seat Location on Lateral-Directional Coefficients ($M = 0.9$, $\beta = 0$, $\alpha = 17^\circ$, Most Aft Transition)

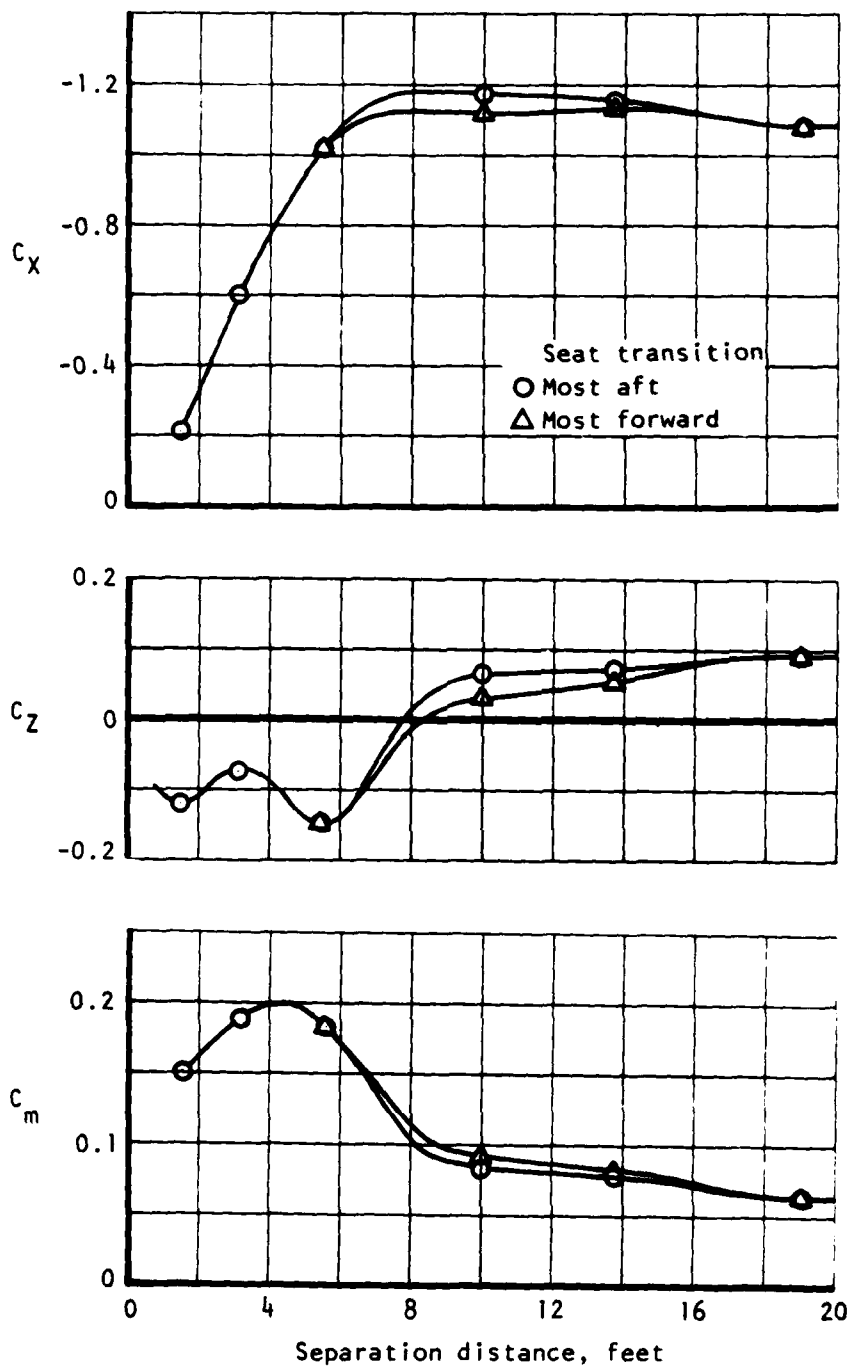


Figure 14. Effect of Forward and Aft Seat Transition on Longitudinal Coefficients ($M = 0.9$, $\beta = 0$, $\alpha = 17^\circ$, Left Forward Seat)

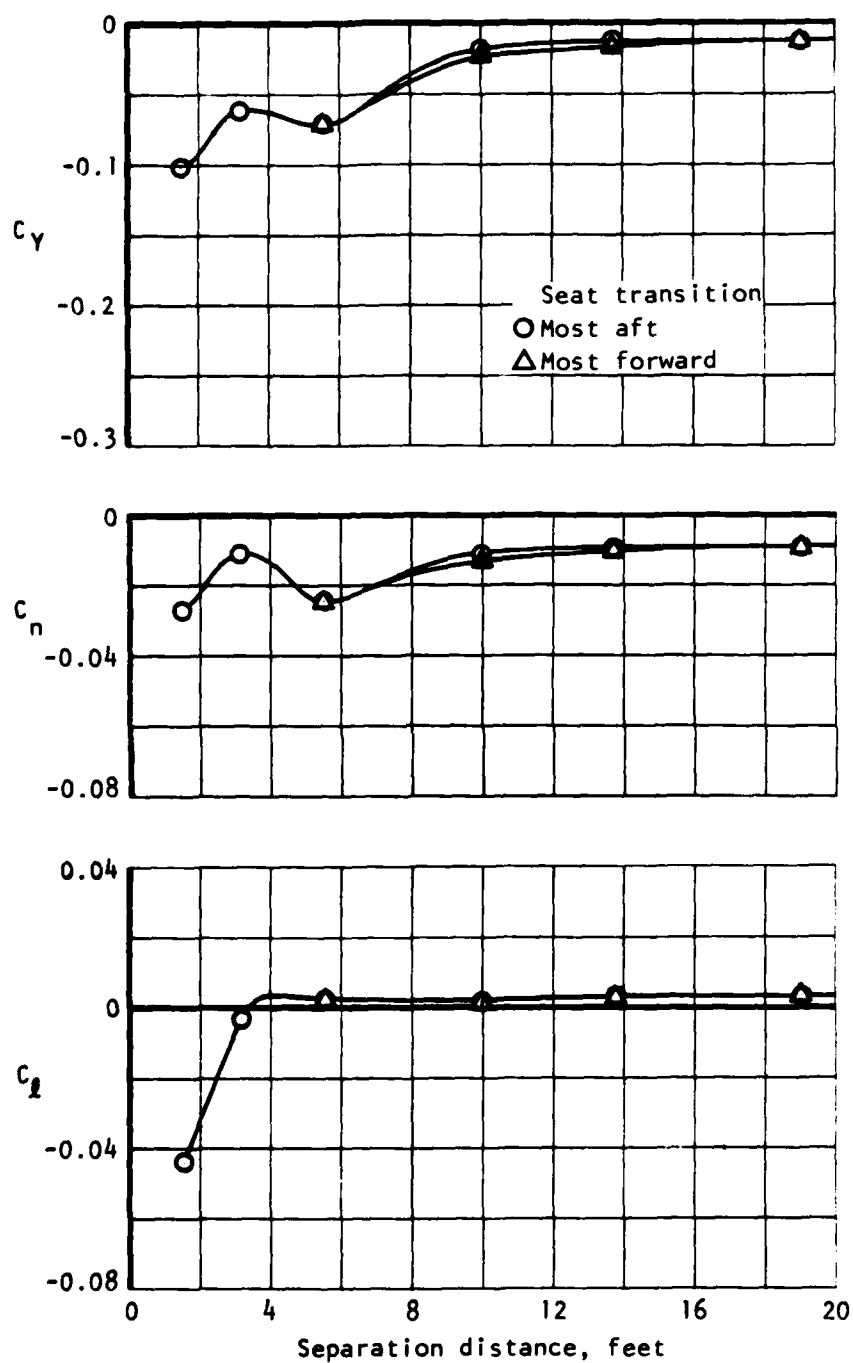


Figure 15. Effect of Forward and Aft Seat Transition on Lateral-Directional Coefficients ($M = 0.9$, $\beta = 0$, $\alpha = 17^\circ$, Left Forward Seat)

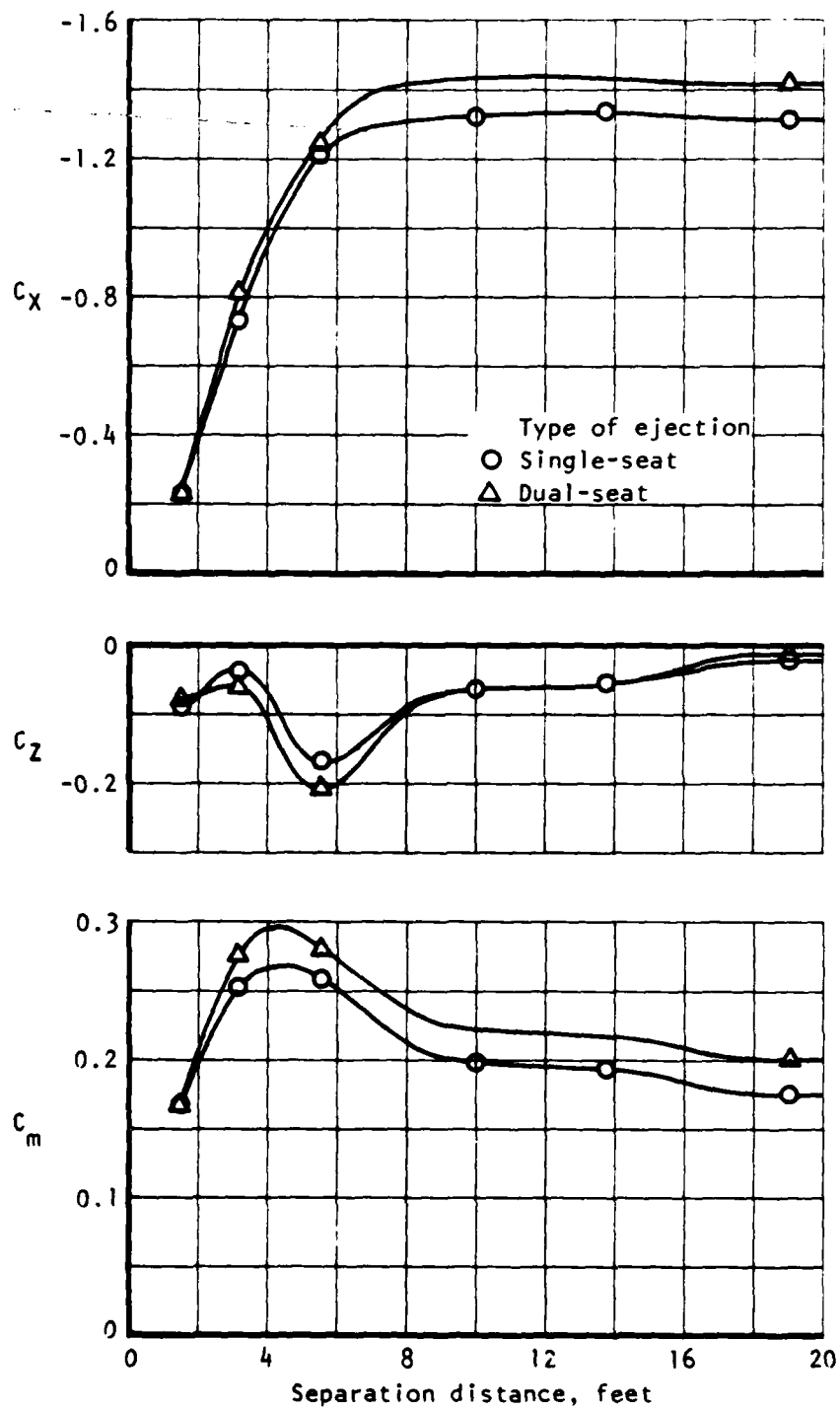


Figure 16. Effect of Single- and Dual-Seat Ejection on Longitudinal Coefficients ($M = 1.3$, $\beta = 0$, $\alpha = 17^\circ$, Left Forward Seat Location, Aft Transition)

and no forebody, the changes in the longitudinal data are judged to be secondary. The forebody has a much larger effect on the seat longitudinal data than the adjacent seat.

A comparison between single and dual seat ejection for the lateral-directional data is presented in Figure 17. The conditions for this comparison are the same as those used for the longitudinal case. The contribution of the adjacent seat is very powerful. For example, the influence due to the adjacent seat, shown at SD = 19 feet, is equivalent to a yaw angle of approximately 8 degrees for the seat alone. This is a very significant disturbance at high speed. Very large and dangerous seat transients could result between seat/rail separation and drogue line stretch. Also, lateral dispersal is a necessary feature of side-by-side ejection, and large seat transients can be expected to complicate the task of achieving safe lateral dispersal. Also, it can be seen in Figure 17 that the forebody effect on the lateral-directional data is not the same for single and dual seats. Thus, data obtained for a single seat in the presence of a forebody could not be applied to a dual seat combination.

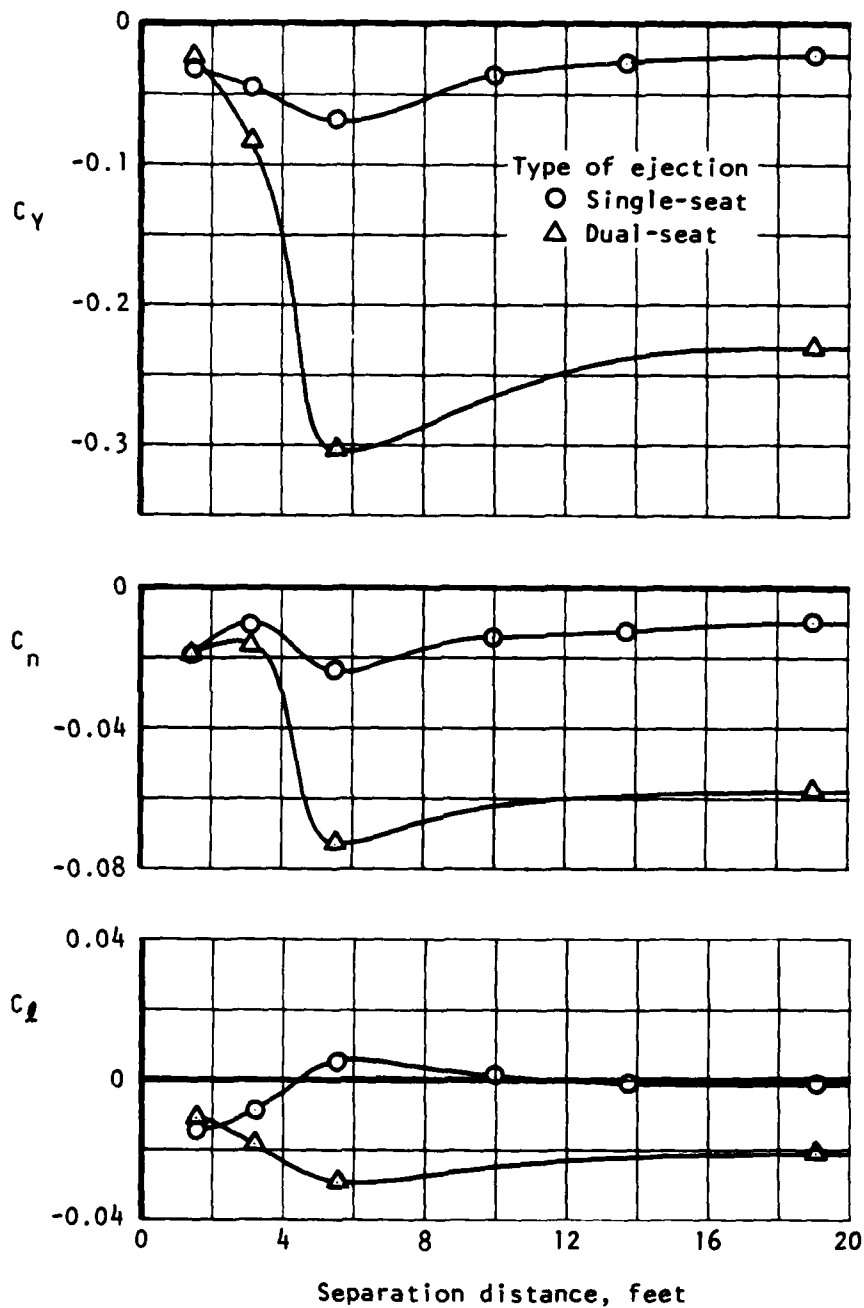


Figure 17. Effect of Single- and Dual-Seat Ejection on Lateral-Directional Coefficients ($M = 1.3$, $\beta = 0$, $\alpha = 17^\circ$, Left Forward Seat Location, Aft Transition)

SECTION III

MATH MODEL ANALYSIS

Rockwell developed a six-degrees-of-freedom (6-DOF) math model to analyze the performance of the ACES-B1 seat system when ejected from the B-1 forebody. The math model output has been compared with sled test data, and good correlation between calculated and test results have been demonstrated up to 600 KEAS. The math model was developed specifically to analyze the ACES-B1 seat performance when ejected from the B-1 aircraft. However, the conclusions that can be drawn using this model are judged to have general significance for high-speed ejection seats.

6-DOF MATH MODEL

The 6-DOF math model was developed to simulate the seat performance from handle pull to final recovery. The performance of the seat subsystems and the sequence of events times were gradually refined based on sled test results. Ejection tests were conducted at zero, 150, 240, 250, 325, 450, 550, and 600 KEAS. Correlations between math model and test results for 150, 240, 250, 325, and 550 KEAS are documented in Reference 4, and typical comparisons are presented in Figure 27.

One feature of the math model that is of particular importance to this study is the buildup of the seat aerodynamic data shown in Figure 18. The static aero data are broken down into three separate increments; i.e., seat alone power off, rocket plumes increment, and a forebody proximity increment. This buildup of the total aerodynamic effect permits a direct evaluation of the forebody increment. Computer calculations can be made with and without the forebody aero data increment.

The forebody aero increment is formulated as a function of the separation distance (SD) between the seat and the forebody. The forebody increment is zero for any value of SD greater than 19 feet. A typical set of data is shown in Figure 18 for one condition ($M = 0.9$, left forward seat). Similar data are contained in the model for the test Mach numbers in Figures 28 and 29 and for each seat location. The program interpolates or extrapolates for other Mach numbers. The forebody data are developed for $\alpha = 17^\circ$ and $\beta = 0^\circ$. It is assumed that the changes to the forebody influence due to α and β can be neglected. Also, it is assumed that the effects of transition distance can be ignored.

The math model contains subroutines to calculate a multidirectional acceleration limit radical ($\sqrt{\quad}$) and the DRI. These terms and their requirements are defined in Military Specification MIL-S-9479B(USAF), "Seat System, Upward Ejection, Aircraft, General Specification For." The DRI is a value

Total	Seat alone	Rocket plumes	Forebody
C_m	$= C_{m_\infty} + C_{m_j} + C_{m_{SD}}$		
C_z	$= C_{z_\infty} + C_{z_j} + C_{z_{SD}}$		
C_x	$= C_{x_\infty} + C_{x_j} + C_{x_{SD}}$		
C_n	$= C_{n_\infty} + C_{n_j} + C_{n_{SD}}$		
C_l	$= C_{l_\infty} + C_{l_j} + C_{l_{SD}}$		
C_y	$= C_{y_\infty} + C_{y_j} + C_{y_{SD}}$		

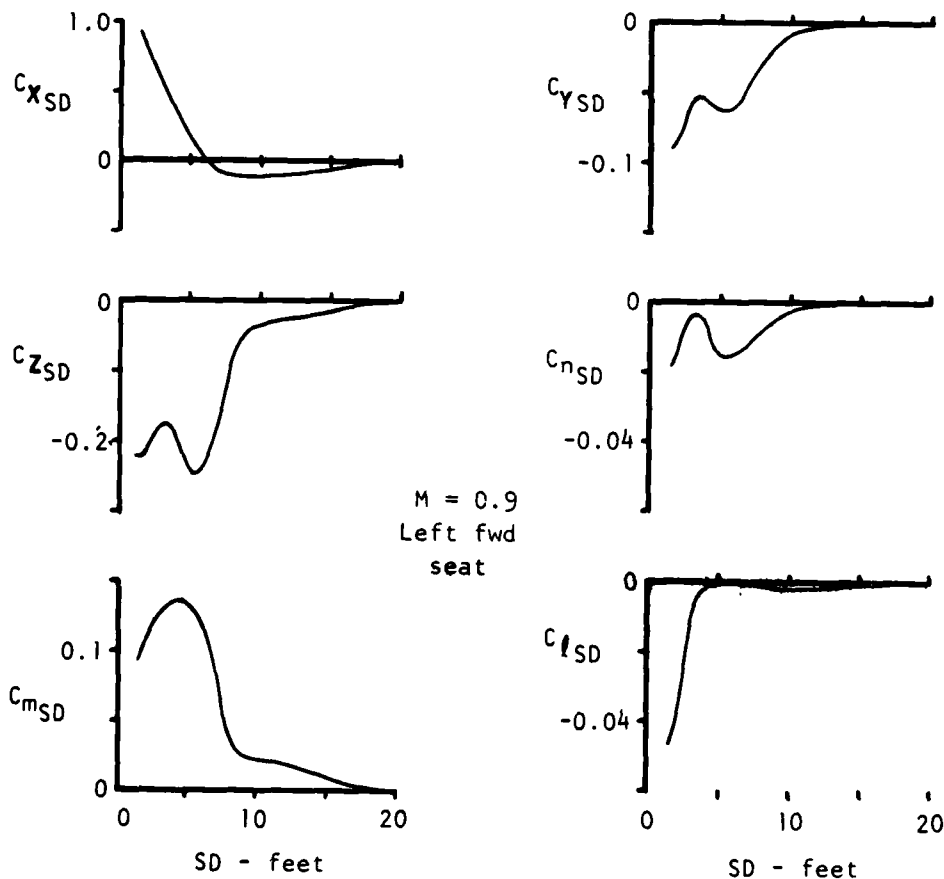
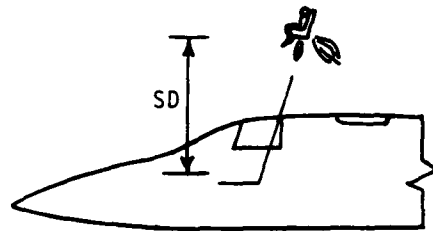


Figure 18. Aero Equations for ACES-BI Math Model and Typical Forebody Aero Data

that is calculated from the vertical acceleration measured on the seat to estimate the probability of injury within the lower spine of the seat occupant (Reference 5). The multidirectional acceleration limit radical is calculated to determine the acceptability of escape sequence acceleration vectors that contain significant components acting in a plane perpendicular to the spinal column. The acceleration radical acts to reduce the allowable DRI for applied accelerations normal to the spin. The limit value of DRI is 18 unless the resultant acceleration vector is more than 5 conical degrees off the spinal z axis and aft of the plane of the seat back, in which case the limit DRI is 16. Limit values for accelerations in the spinal x and y axis depend on a number of things; however, approximate values for the ACES-B1 system would be 35 in the x-axis and 15 in the y-axis. The acceleration radical is limited by the following equation:

$$\sqrt{\left(\frac{\text{DRI}}{(\text{DRI})_L}\right)^2 + \left(\frac{G_x}{G_{xL}}\right)^2 + \left(\frac{G_y}{G_{yL}}\right)^2} \leq 1.0$$

EFFECT OF FOREBODY FLOW FIELD

Trajectories were computed with and without the forebody aero data for the left forward seat location (pilot) at four flight conditions. The flight conditions selected were 400, 500, and 600 KEAS at sea level and 600 KEAS at 35,000 feet. The two 600 KEAS cases are intended to show the effect of Mach number not altitude; 600 KEAS at sea level is $M = 0.91$, and 600 KEAS at 35,000 feet is $M = 1.87$. All calculations are for a fifth-percentile crewman and an ejected weight of 354 pounds. The seat reference area for a fifth-percentile crewman in the ACES-B1 seat is 6.48 square feet. The reference length is 2.87 feet.

The acceleration radical, DRI, component accelerations, and angular rates for each flight condition are presented in Figures 19 through 26 with and without the forebody aero increment. The component accelerations are in the seat axis system, and the angular rates are about the seat/man center of gravity. The data are plotted to a separation distance of 19 feet. This distance is the assumed limit of the forebody flow field and is just prior to drogue line stretch. It can be seen that the influence of the forebody is small at 400 KEAS, increases with speed, and has become significant at 600 KEAS. The influence of Mach number is worth noting. The high-speed subsonic data (Figure 24) and the high-speed supersonic data (Figure 26) illustrate the effect of Mach number on the component accelerations and angular rates. The effect of Mach number is important with and without the influence of the forebody.

The upward force on the seat due to the forebody aero data may cause a serious increase in the DRI at high speed. For the 600 KEAS at sea-level

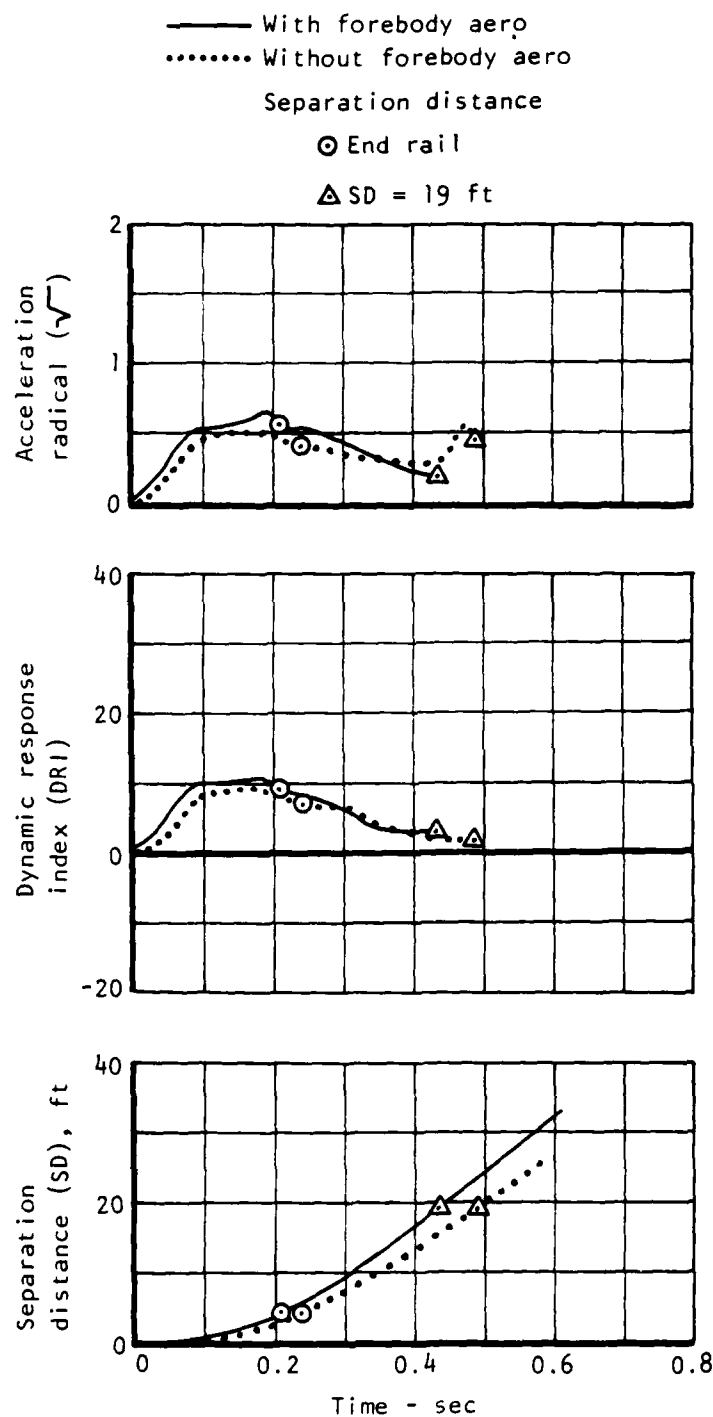


Figure 19. Effect of Forebody Aero Data on Crew Acceleration
 (400 KEAS at Sea Level, Left Forward Seat)

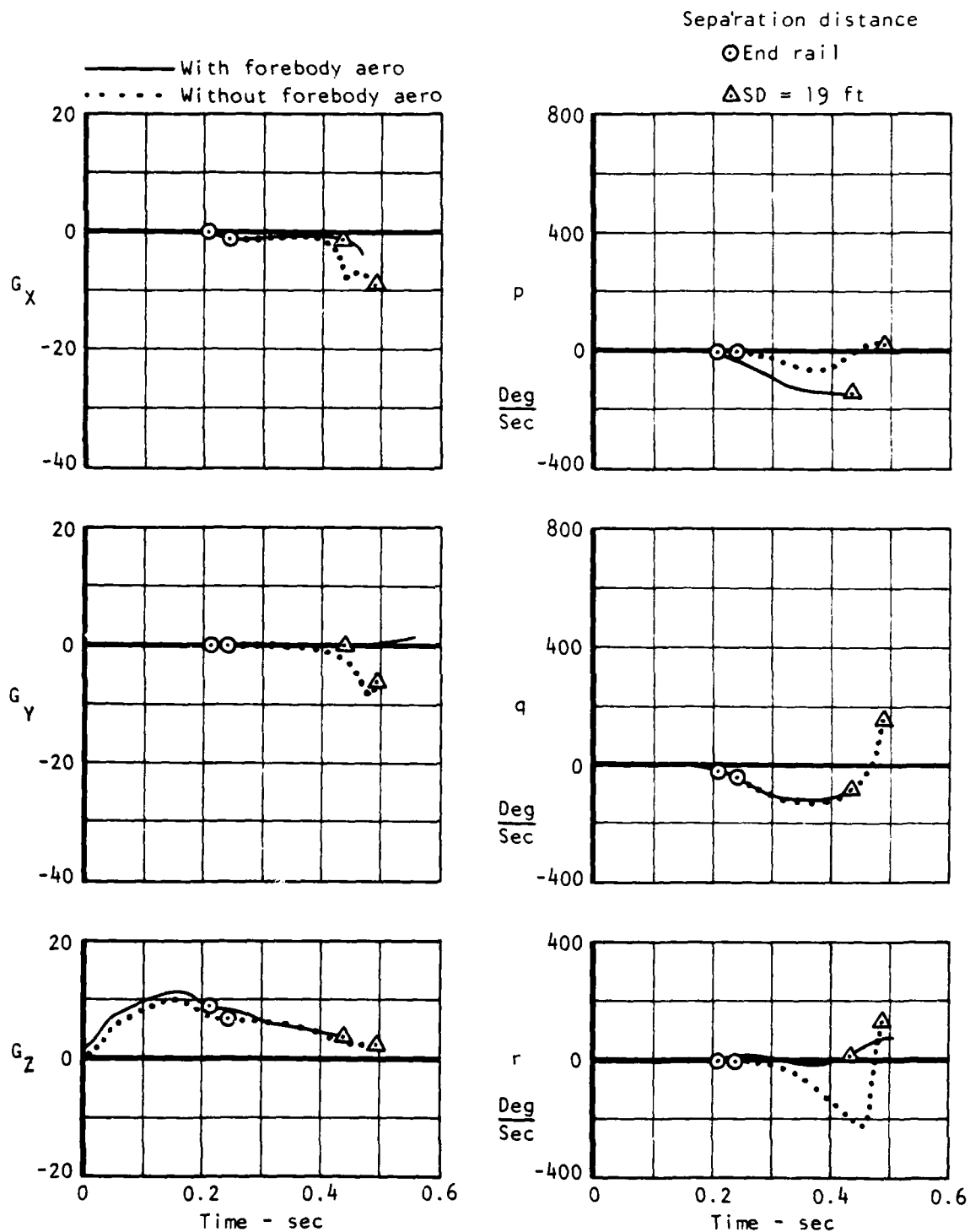


Figure 20. Effect of Forebody Aero on Component Accelerations and Angular Rates (400 KEAS at Sea Level, Left Forward Seat)

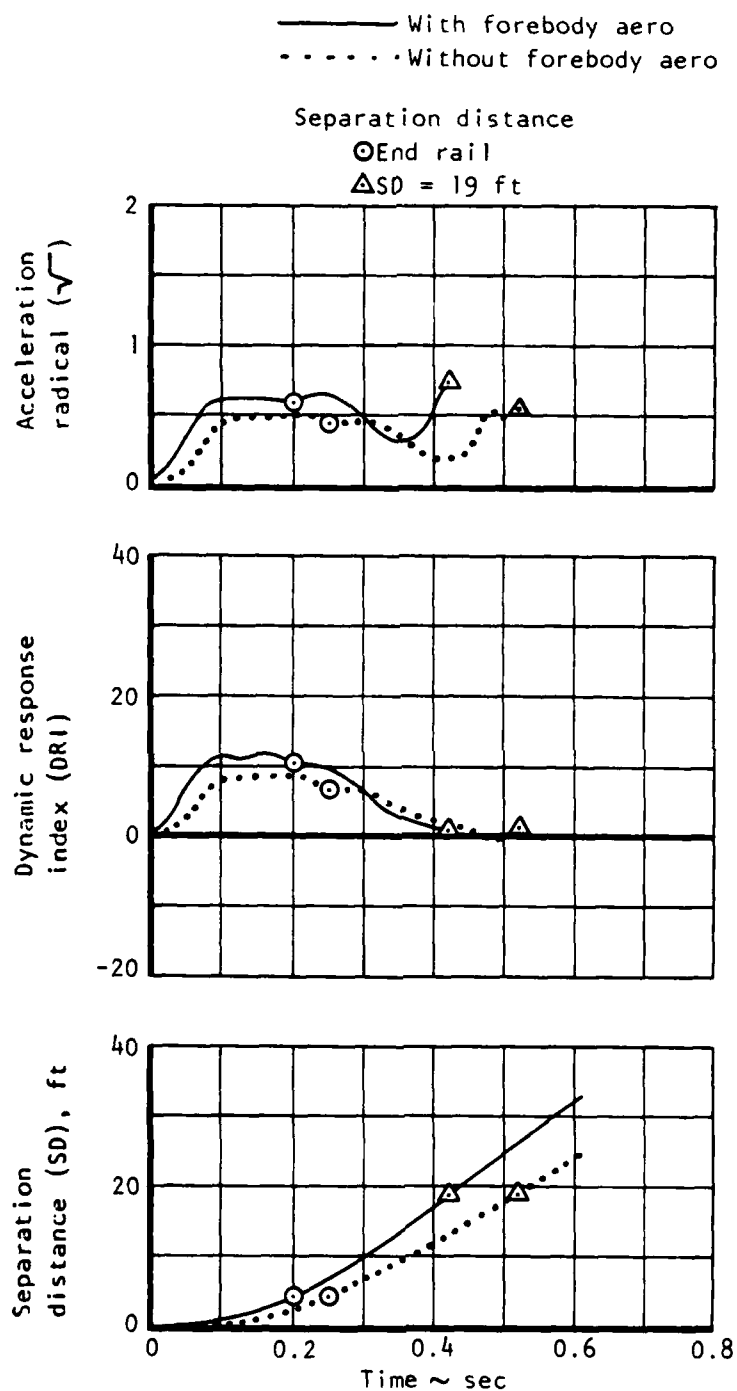


Figure 21. Effect of Forebody Aero Data on Crew Acceleration
 (500 KEAS at Sea Level, Left Forward Seat)

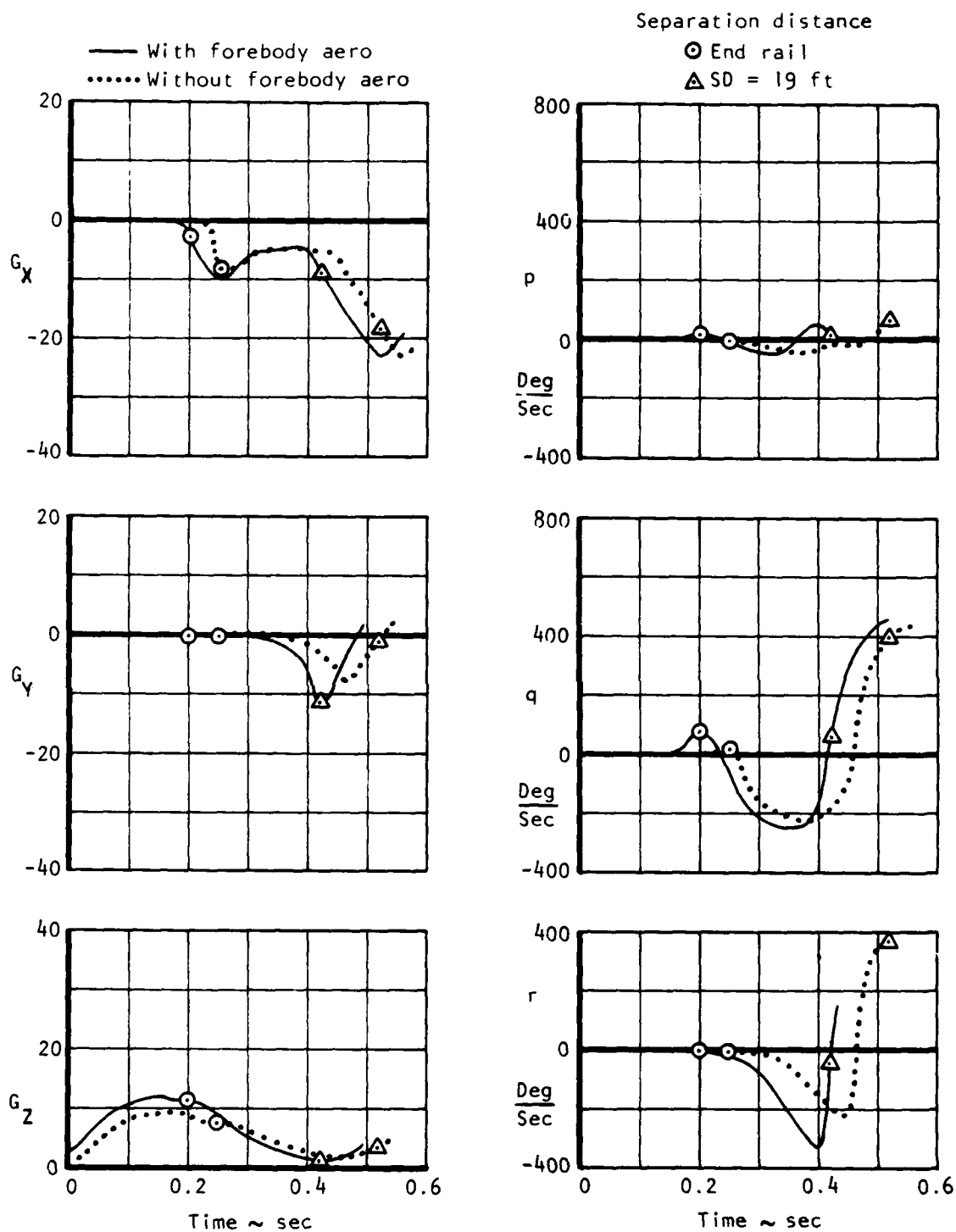


Figure 22. Effect of Forebody Aero on Component Acceleration and Angular Rates (500 KEAS at Sea Level, Left Forward Seat)

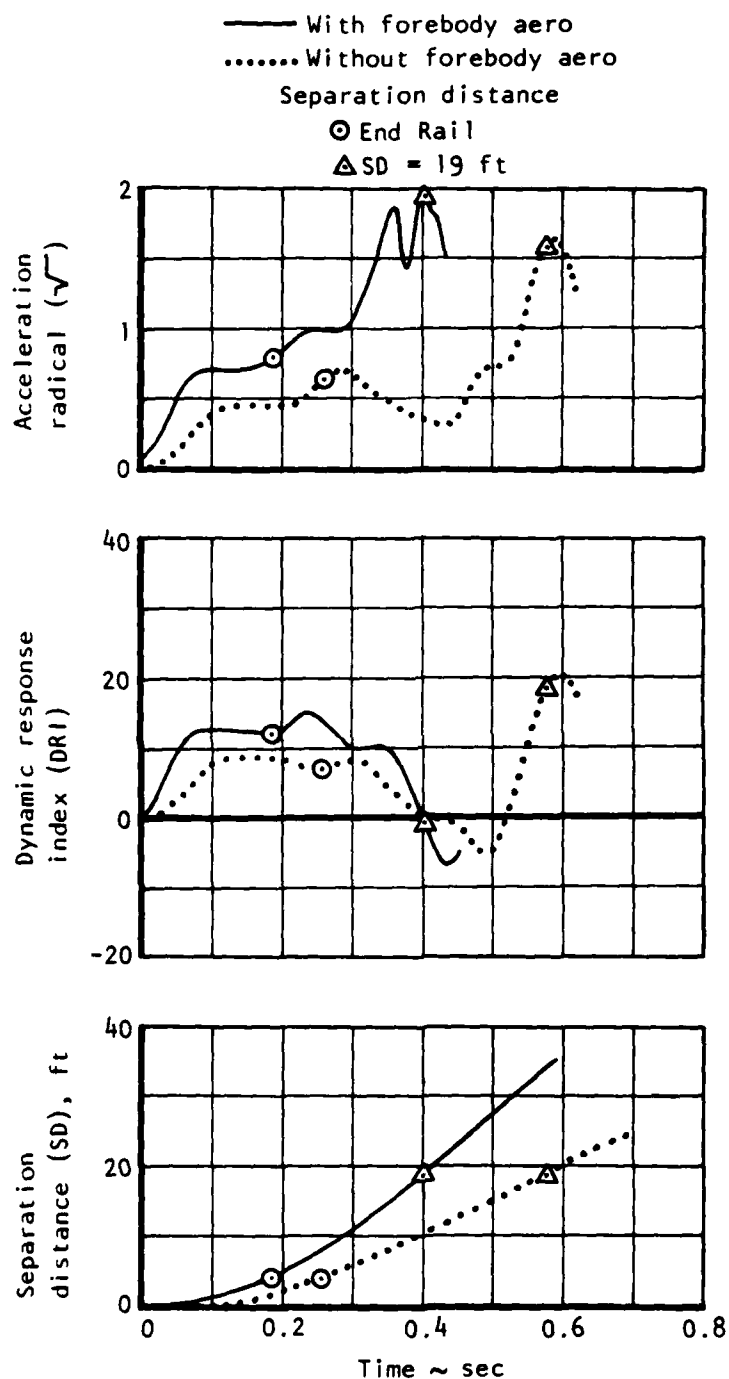


Figure 23. Effect of Forebody Aero Data on Crew Acceleration
 (600 KEAS at Sea Level, Left Forward Seat, $M = 0.91$)

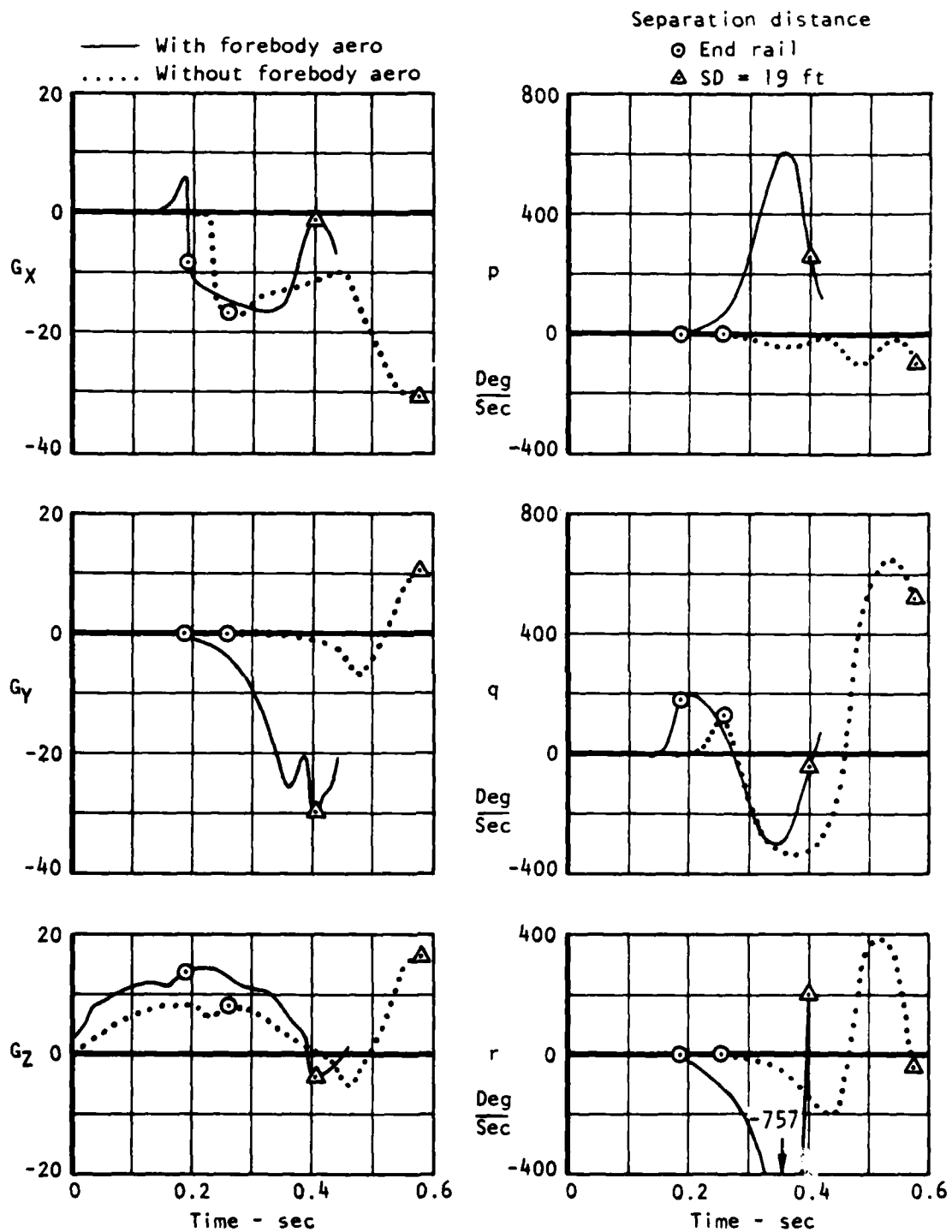


Figure 24. Effect of Forebody Aero on Component Accelerations and Angular Rates (600 KEAS at Sea Level, Left Forward Seat, $M = 0.91$)

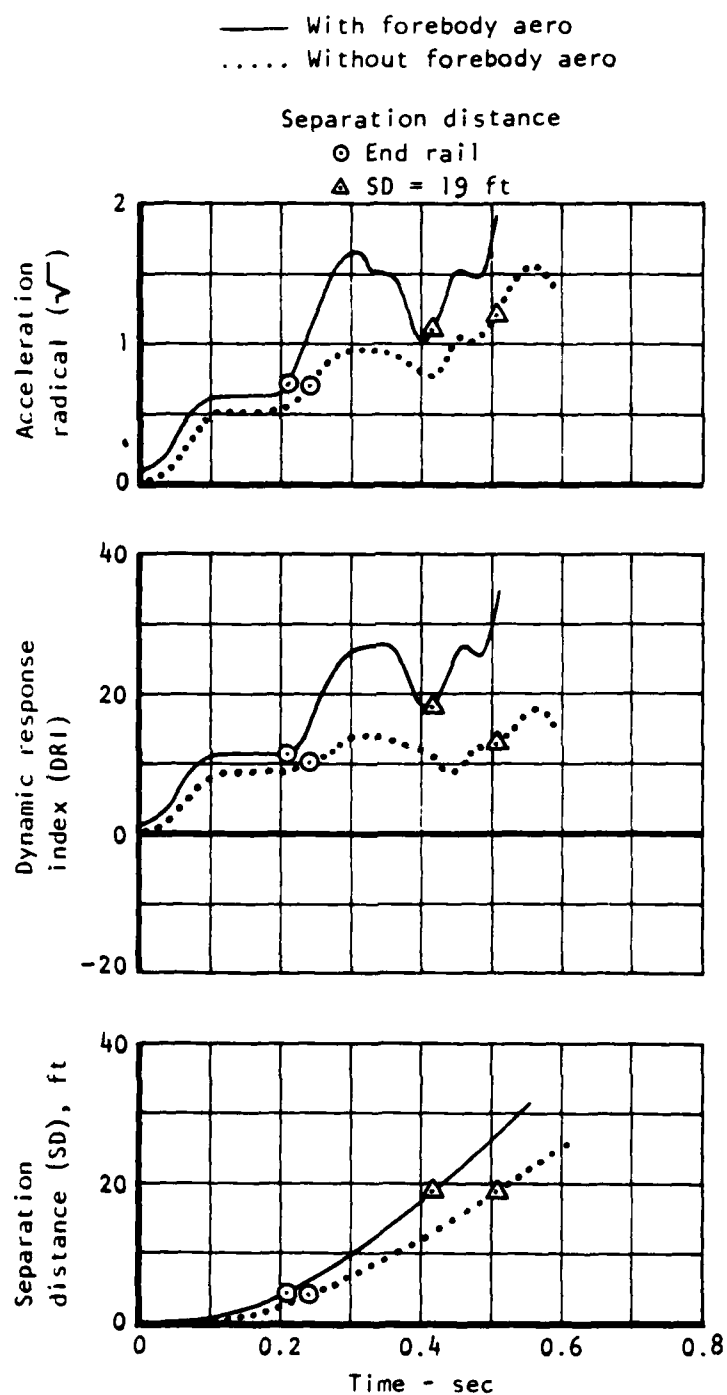


Figure 25. Effect of Forebody Aero Data on Crew Acceleration
 (600 KEAS at 35,000 ft, Left Forward Seat, $M = 1.87$)

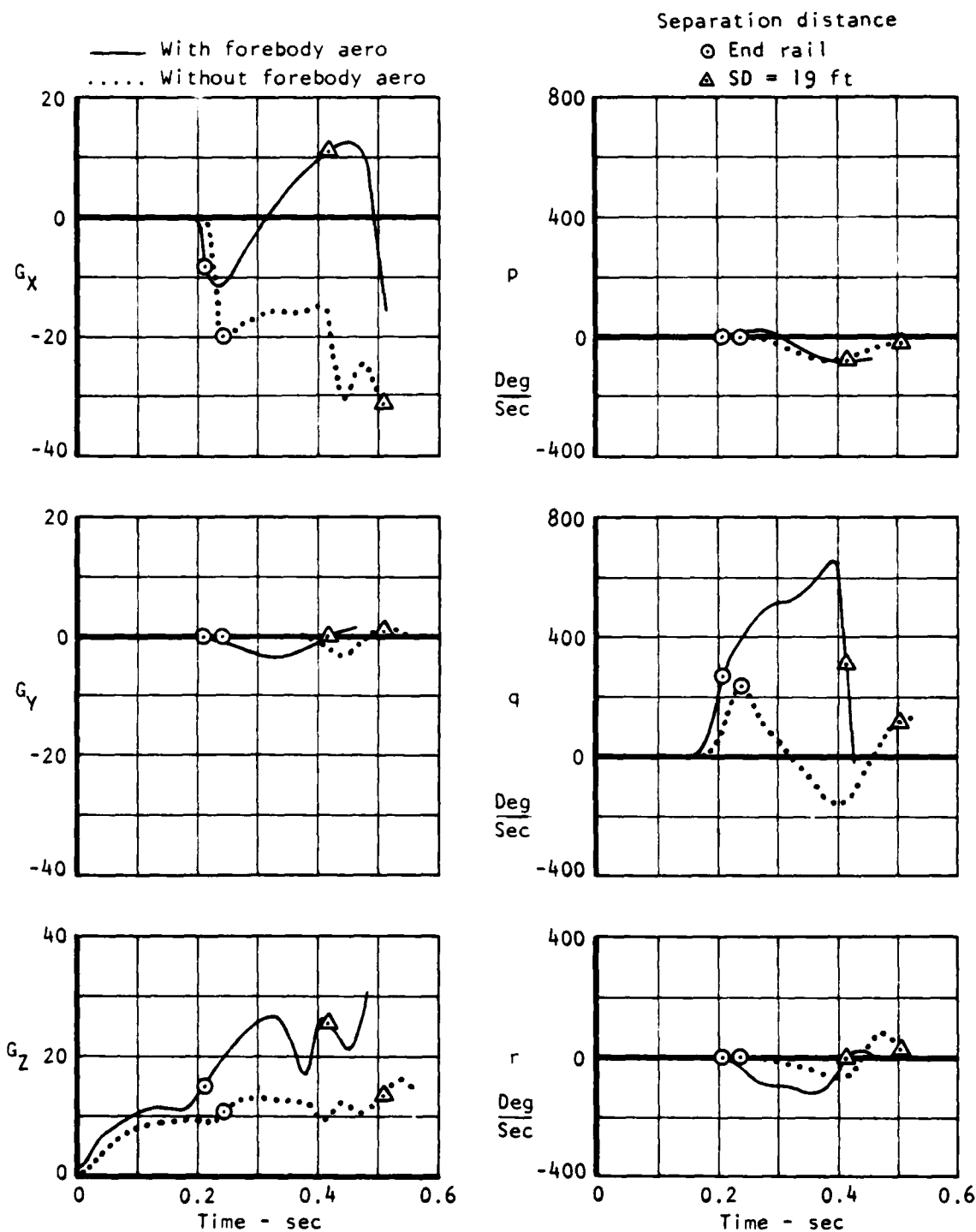
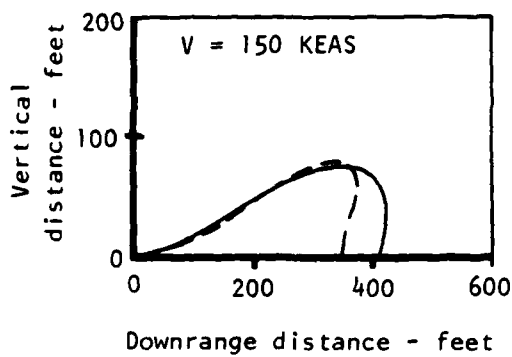


Figure 26. Effect of Forebody Aero on Component Accelerations and Angular Rates (600 KEAS at 35,000 ft, Left Forward Seat, $M = 1.87$)



Conditions:

- ° Left forward seat
- ° 4,000-foot altitude
- ° Holloman test track

———— Sled test
 - - - - - Math model

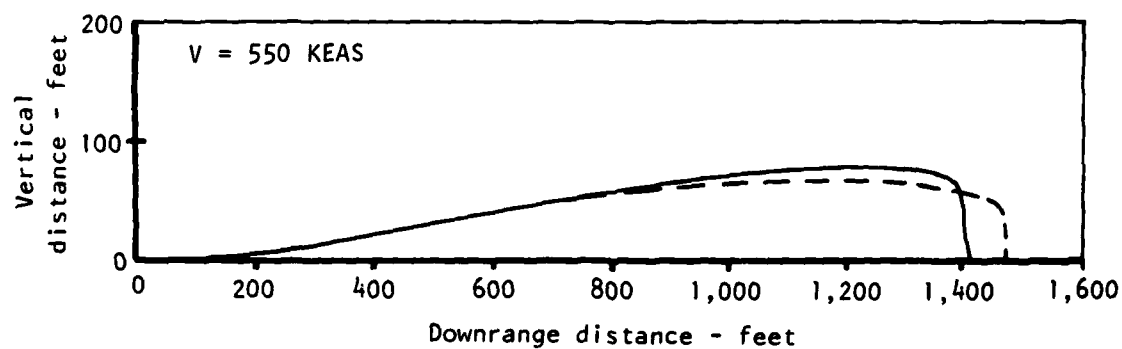
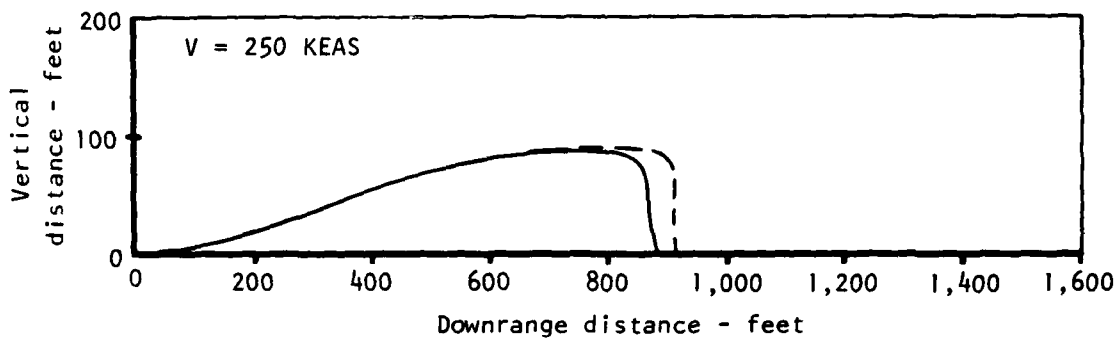


Figure 27. Comparison of Math Model and Sled Test Data

case, the force coefficient (C_z) due to the forebody averages -0.2 during the first 6 feet of separation distance. This can be seen in Figure 18. A force coefficient of $C_z = -0.2$ represents an upward force increment of 1,581 pounds or an acceleration increment of 4.47 g for the fifth-percentile man. Obviously, the forebody influence on the seat forces cannot be ignored at high speed.

Another effect worth noting is the influence of the forebody on the seat yaw rate for the 600 KEAS at sea-level case. The basic seat is directionally unstable prior to drogue line stretch, and any yaw disturbance at ejection will cause a rapid increase in yaw rate and angle of sideslip. The data in Figure 9 show that the forebody can induce a yaw disturbance during ejection, and the consequence of the forebody yaw disturbance can be observed in Figure 24. The unstable seat yaws rapidly after seat/rail separation and generates a large unwanted side acceleration (G_y). Ejecting directionally unstable seats at high speed is a tricky business, at best. Ejecting them through a forebody flow field can be expected to worsen the situation.

Figures 19 through 26 show that the forebody flow field can have a significant influence on the seat aerodynamic forces and moments. During high-speed ejection, it would not have been possible to accurately simulate the ACES-B1 seat performance without including the influence of the forebody flow field.

HUMAN ENGINEERING/BIOMEDICAL ANALYSIS

The influence of the forebody flow field upon the seat occupant was investigated. Spinal loads and biomechanical reactions during ejection were analyzed using trajectory data with and without the forebody influence. The results are judged to be useful for current and future seat designs.

The incremental effect of the forebody on the DRI and acceleration radical is to increase the headward force along the spinal axis at all speeds. This can be seen in Figures 19, 21, 23, and 25. The consequence of the increased spinal compression induced by the forebody is to reduce the maximum speed at which specification requirements for the DRI and multidirectional radical can be met.

Another important influence of the forebody at high speed is to induce large excursions in seat attitude. For example, at 600 KEAS at sea level, the forebody induces a large yaw rate, resulting in a large side acceleration. G_y reached a value of 30 with the forebody aero but was only 7 without the forebody aero. These values compare with a limit value of approximately 15. At supersonic speeds, the seat reactions are different but still large. For example, at 600 KEAS at 35,000 feet, the forebody induces a large pitch rate. As the seat leaves the rails (Figure 26), it pitches backward until a large

portion of the drag force is in the headward direction. This increases the acceleration in the spinal axis and results in a DRI value that is in excess of the limit value of 18. Without the forebody aero, the DRI did not exceed 18 (Figure 25). These results show that the forebody induces incremental spinal forces that are important and that change with flight condition.

Large angle-of-attack or angle-of-sideslip transients can intensify the biomechanical problems. The response of the torso, head, arms, and legs to the rapid alignment of the seat by the drogue chute are dependent on seat attitude at line stretch. Also, at high dynamic pressures, the head, neck, arms, legs, and hands are heavily loaded by windblast forces. Providing for support, flail restraint, and shielding of these appendages is more difficult when large off-axis windblast angles exist.

The results of this study demonstrate that the B-1 forebody has a significant influence on the occupant of the ACES-B1 seat. Some of the results are felt to apply in general. It seems reasonable to assume that every seat installation will have some degree of seat/forebody interaction. Further, it seems only prudent to include separation aero data in any high-speed simulation. Otherwise, the simulation may conceal the real injury possibilities that the crewman is exposed to. This study revealed that the B-1 forebody induces a large upward force on the seat at high speed. This effect was judged to be related to the pressure field generated by the windshield. It is logical to assume that any present or future design that ejects behind a windshield will experience a similar effect. This study also revealed that the B-1 forebody induces large attitude excursions after seat/rail separation in both pitch and yaw. The yaw effect was judged to be due to the unsymmetrical, off-centerline arrangement of the B-1. For symmetrical centerline configurations, the forebody influence on yaw excursions would logically be less than for the B-1, but pitch excursions similar to the B-1 case would still be possible. Even symmetrical configurations may experience large yaw excursions due to the combined effect of seat instability plus initial sideslip at ejection. Future seat designs should be stable in order to keep the high-speed biomedical problems within reasonable bounds.

SECTION IV

CONCLUSIONS

1. It would not have been possible to accurately simulate the ACES-B1 seat acceleration, angular rates, and trajectory during high-speed ejection without including the influence of the B-1 forebody flow field.
2. The B-1 forebody flow field interacts with the ACES-B1 seat from its initial position through the first 19 feet of seat travel. The primary parameters that influence the incremental contribution of the forebody are separation distance, seat location, and Mach number. The influence of aircraft angle of attack and sideslip at ejection and seat transition after seat/rail separation were found to be negligible up to $\beta = 5^\circ$ and $\alpha = \pm 5^\circ$.
3. Side-by-side seats have a significant aerodynamic interaction at high speed. The influence of an adjacent seat is most powerful on the lateral-directional data at supersonic speed. At $M = 1.3$, the influence of the adjacent seat is equivalent to a yaw angle of approximately 8 degrees.
4. The B-1 forebody induces an upward force on the seat that is present at all speeds. This effect is judged to be caused by the pressure field generated by the windshield. Trajectory calculations reveal that this headward force increment causes a significant increase in the DRI and the multidirection acceleration radical at high speed. Present and future designs that eject behind a windshield may logically experience a similar effect.
5. Trajectory calculations exhibit large excursions in seat attitude caused by the forebody flow field. The excursions are large enough to pose serious biomechanical problems at high speed. It is the combined effect of the forebody disturbance plus seat instability that produces the large excursions. The magnitude of ejection transients could be reduced if future high-speed seats were designed to be stable.

APPENDIX

ACES-B-1/B-1 FOREBODY WIND TUNNEL DATA

SD - ft	TD - ft	Pitch runs			Yaw runs			Seat arrangement
		Mach No.			Mach No.			
		0.6	0.9	1.3	0.6	0.9	1.3	
1.50	0	1	2	3				Single - left side
3.16	0	4	5	6	7	8	9	
5.50	0	10	11	12	13	14	15	
10.00	-1.375	16	17	18	19	20	21	
10.00	0	22	23	24	25	26	27	
10.00	2.50	28	29	30	31	32	33	
13.67	-2.497	34	35	36	37	38	39	
13.67	1.378	40	41	42	43	44	45	
13.67	4.030	46	47	48	49	50	51	
∞	-	52	53	54	55	56	57	
1.50	0	58	59	60				Dual - side- by-side
3.17	0	61	62	63	64	65	66	
5.50	0	67	68	69	70	71	72	
∞	-	73	74	75	76	77	78	

NOTE: TD positive aft of 17° rail
ejection line

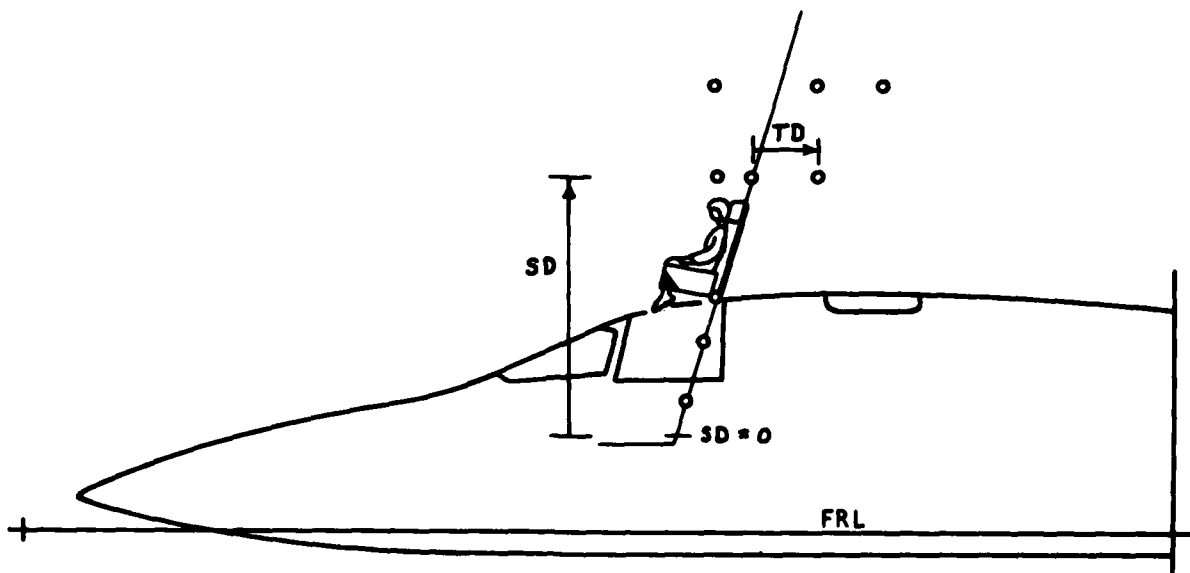


Figure 28. Forward Crew Location Run Index

SD - ft	TD - ft	Pitch runs			Yaw runs			Seat arrangement
		Mach No.			Mach No.			
		0.6	0.9	1.5	0.6	0.9	1.5	
1.75	0	79	80	81				Single - left side
2.83	0	82	83	84	85	86	87	
4.88	0	88	89	90	91	92	93	
9.375	-1.376	94	95	96	97	98	99	
9.375	1.124	100	101	102	103	104	105	
13.04	-2.497	106	107	108	109	110	111	
13.04	0	112	113	114	115	116	117	
13.04	4.17	118	119	120	121	122	123	
∞	-	124	125	126	127	128	129	
1.75	0	130	131	132				Dual - side- by-side
2.83	0	133	134	135	136	137	138	
4.88	0	139	140	141	142	143	144	
∞	-	145	146	147	148	149	150	

NOTE: TD positive aft of 17° rail
ejection line

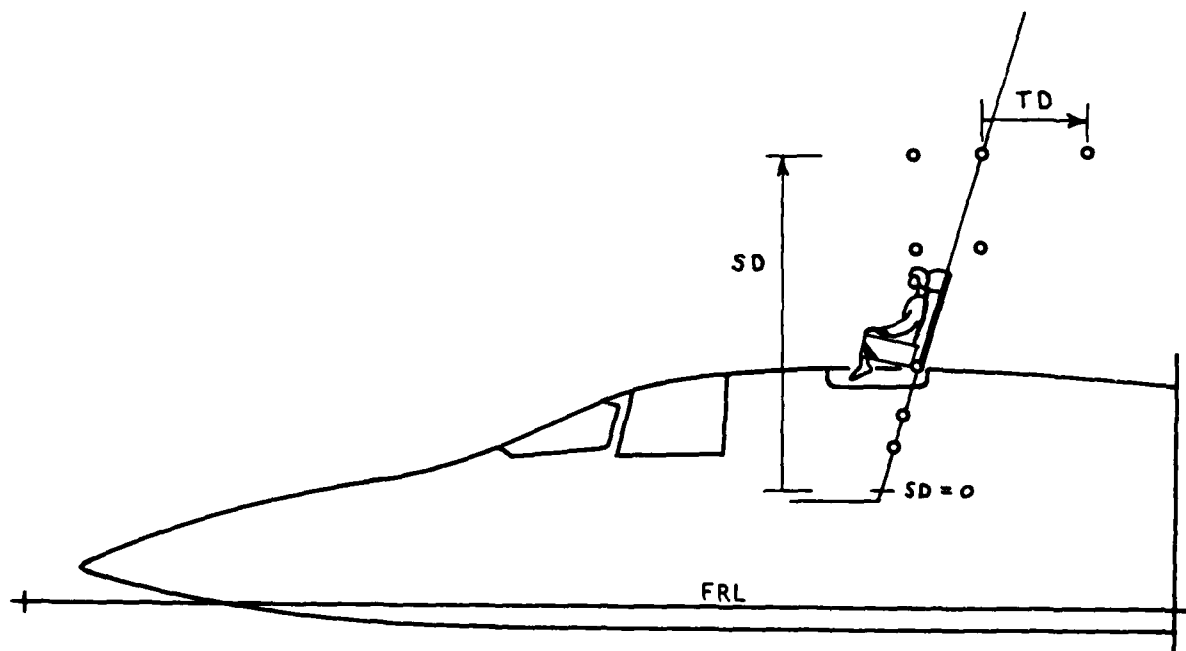
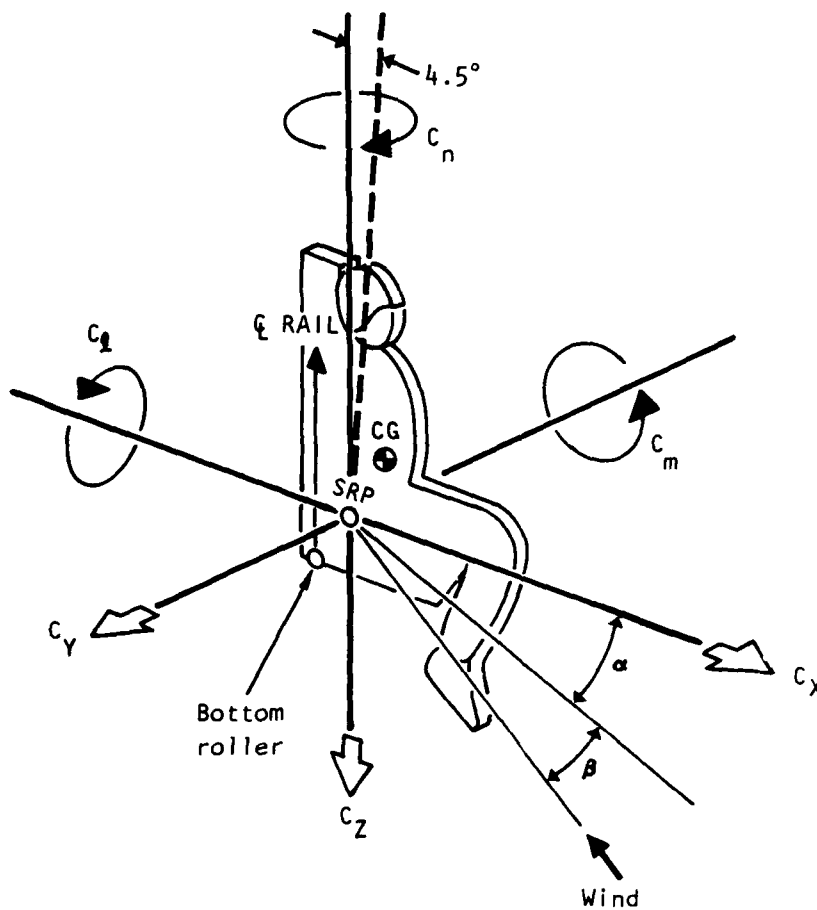


Figure 29. Aft Crew Location Run Index



NOTE:

The Z-axis for the aerodynamic data is parallel to the rail ζ . The plane of the compressed seat back cushion is 4.5° forward of the aerodynamic axis.

Figure 30. Sign Convention for Aerodynamic Coefficients and Angles

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
1	0.60	12.19	0.00	-0.156	-.1146	-.0598	.1169	-.0214	-.0270
	0.60	13.96	0.00	-0.139	-.1163	-.0548	.1094	-.0195	-.0288
	0.60	15.78	0.00	-0.135	-.1282	-.0612	.1064	-.0197	-.0288
	0.60	17.55	0.00	-0.134	-.1373	-.0668	.1022	-.0204	-.0290
	0.60	19.36	0.00	-0.125	-.1335	-.0649	.0972	-.0195	-.0304
	0.60	21.30	0.00	-0.118	-.1401	-.0626	.0926	-.0188	-.0281
	0.60	23.24	0.00	-0.115	-.1415	-.0594	.0893	-.0179	-.0263
	0.60	25.16	0.00	-0.105	-.1408	-.0520	.0856	-.0169	-.0225
	0.60	26.97	0.00	-0.095	-.1408	-.0429	.0811	-.0152	-.0167
2	0.90	13.12	0.00	-0.219	-.1202	-.0674	.1593	-.0230	-.0317
	0.90	14.92	0.00	-0.214	-.1220	-.0803	.1554	-.0238	-.0361
	0.90	16.84	0.00	-0.215	-.1173	-.1026	.1515	-.0270	-.0450
	0.90	18.76	0.00	-0.208	-.1252	-.0982	.1479	-.0256	-.0411
	0.90	20.67	0.00	-0.202	-.1313	-.0909	.1447	-.0247	-.0380
	0.90	22.59	0.00	-0.198	-.1342	-.0876	.1416	-.0251	-.0340
	0.90	24.51	0.00	-0.183	-.1356	-.0666	.1350	-.0212	-.0295
	0.90	26.37	0.00	-0.168	-.1368	-.0450	.1262	-.0167	-.0171
3	1.28	12.14	0.00	-0.244	-.0796	-.0361	.1784	-.0216	-.0161
	1.28	13.95	0.00	-0.243	-.0813	-.0372	.1772	-.0211	-.0170
	1.28	15.74	0.00	-0.234	-.0851	-.0343	.1722	-.0197	-.0151
	1.28	17.47	0.00	-0.227	-.0898	-.0312	.1677	-.0190	-.0147
	1.28	19.19	0.00	-0.215	-.0912	-.0344	.1611	-.0187	-.0139
	1.28	20.89	0.00	-0.205	-.0948	-.0377	.1560	-.0190	-.0132
	1.28	22.80	0.00	-0.193	-.0952	-.0383	.1479	-.0176	-.0121
	1.28	24.69	0.00	-0.174	-.0929	-.0410	.1354	-.0162	-.0119
	1.28	26.49	0.00	-0.154	-.0907	-.0323	.1217	-.0122	-.0073
4	0.60	12.15	0.00	-0.507	-.1438	-.0353	.1628	-.0054	.0281
	0.60	13.98	0.00	-0.507	-.1549	-.0380	.1708	-.0054	.0308
	0.60	15.70	0.00	-0.499	-.1624	-.0547	.1712	-.0080	.0247
	0.60	17.44	0.00	-0.501	-.1737	-.0606	.1745	-.0078	.0224
	0.60	19.25	0.00	-0.494	-.1819	-.0692	.1776	-.0110	.0179
	0.60	21.17	0.00	-0.487	-.1821	-.0665	.1766	-.0134	.0167
	0.60	23.08	0.00	-0.478	-.1792	-.0697	.1722	-.0172	.0081
	0.60	24.98	0.00	-0.465	-.1746	-.0639	.1660	-.0178	.0061
	0.60	26.82	0.00	-0.451	-.1695	-.0576	.1579	-.0176	.0041

Run	M	σ	β	C_X	C_Z	C_Y	C_m	C_n	C_l
5	0.90	12.05	0.00	-0.602	-.0199	-.0507	.1630	-.0141	.0090
	0.90	13.90	0.00	-0.601	-.0397	-.0566	.1723	-.0126	.0032
	0.90	15.76	0.00	-0.603	-.0558	-.0638	.1820	-.0122	-.0049
	0.90	17.47	0.00	-0.599	-.0767	-.0587	.1919	-.0095	-.0000
	0.90	19.27	0.00	-0.608	-.0954	-.0484	.2027	-.0097	-.0010
	0.90	21.07	0.00	-0.607	-.1020	-.0556	.2080	-.0103	-.0056
	0.90	22.97	0.00	-0.603	-.1094	-.0481	.2147	-.0098	-.0055
	0.90	24.85	0.00	-0.602	-.1165	-.0359	.2194	-.0079	-.0044
	0.90	26.68	0.00	-0.597	-.1269	-.0311	.2249	-.0079	-.0072
6	1.28	12.08	0.00	-0.720	.0008	-.0179	.2164	-.0085	.0163
	1.28	13.90	0.00	-0.729	-.0092	-.0536	.2291	-.0115	-.0050
	1.28	15.76	0.00	-0.736	-.0260	-.0604	.2431	-.0123	-.0134
	1.28	17.47	0.00	-0.734	-.0438	-.0309	.2547	-.0084	-.0038
	1.28	19.35	0.00	-0.726	-.0569	-.0309	.2658	-.0079	-.0034
	1.28	21.23	0.00	-0.716	-.0711	-.0372	.2733	-.0088	-.0086
	1.28	23.02	0.00	-0.703	-.0838	-.0388	.2791	-.0085	-.0089
	1.28	24.89	0.00	-0.680	-.0863	-.0383	.2784	-.0095	-.0093
	1.28	26.69	0.00	-0.656	-.0874	-.0324	.2745	-.0097	-.0080
7	0.60	17.00	-3.89	-0.511	-.1585	-.0317	.1638	-.0133	.0050
	0.60	17.00	-2.01	-0.512	-.1585	-.0407	.1662	-.0082	.0212
	0.60	17.00	-0.27	-0.505	-.1669	-.0628	.1738	-.0086	.0207
	0.60	17.00	1.47	-0.498	-.1606	-.0928	.1708	-.0119	.0137
	0.60	17.00	3.39	-0.506	-.1519	-.1130	.1637	-.0125	.0020
	0.60	17.00	5.32	-0.498	-.1422	-.1498	.1525	-.0197	-.0044
	0.60	17.00	7.26	-0.498	-.1251	-.1839	.1479	-.0246	-.0099
	0.60	17.00	9.16	-0.489	-.1132	-.2237	.1454	-.0317	-.0200
8	0.90	17.00	-4.06	-0.621	-.0920	-.0101	.1984	-.0062	.0022
	0.90	17.00	-2.13	-0.611	-.0784	-.0434	.1898	-.0105	-.0030
	0.90	17.00	-0.22	-0.596	-.0642	-.0755	.1864	-.0138	-.0064
	0.90	17.00	1.68	-0.594	-.0529	-.0907	.1814	-.0177	-.0077
	0.90	17.00	3.57	-0.600	-.0661	-.1184	.1882	-.0228	-.0136
	0.90	17.00	5.48	-0.616	-.0636	-.1544	.1892	-.0287	-.0196
	0.90	17.00	7.37	-0.638	-.0723	-.1896	.2003	-.0335	-.0253
	0.90	17.00	9.22	-0.660	-.0773	-.2472	.2159	-.0396	-.0382

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
9	1.27	17.00	-4.90	-0.734	-.0469	.0367	.2531	.0039	.0072
	1.27	17.00	-3.03	-0.737	-.0436	.0035	.2529	-.0015	.0050
	1.27	17.00	-1.25	-0.738	-.0434	-.0347	.2537	-.0095	-.0008
	1.27	17.00	0.46	-0.735	-.0501	-.0672	.2594	-.0140	-.0118
	1.27	17.00	2.25	-0.727	-.0471	-.0988	.2573	-.0202	-.0165
	1.27	17.00	4.04	-0.728	-.0631	-.1266	.2687	-.0255	-.0182
	1.27	17.00	5.74	-0.736	-.0705	-.1719	.2747	-.0324	-.0277
	1.27	17.00	7.62	-0.732	-.0664	-.2260	.2735	-.0423	-.0451
	1.27	17.00	9.45	-0.729	-.0601	-.2595	.2742	-.0467	-.0592
10	0.60	13.10	0.00	-0.842	-.1176	-.0189	.0997	-.0066	-.0034
	0.60	14.89	0.00	-0.834	-.1326	-.0122	.0995	-.0046	-.0087
	0.60	16.81	0.00	-0.822	-.1578	.0077	.1012	.0018	-.0062
	0.60	18.74	0.00	-0.809	-.1681	.0197	.1030	.0059	.0022
	0.60	20.65	0.00	-0.798	-.1808	.0111	.1081	.0028	.0066
	0.60	22.57	0.00	-0.778	-.1940	.0038	.1107	.0018	.0076
	0.60	24.50	0.00	-0.748	-.2126	-.0073	.1144	.0003	.0059
	0.60	26.36	0.00	-0.723	-.2254	-.0100	.1136	-.0002	.0028
11	0.90	11.97	0.00	-1.037	-.0920	-.1196	.1701	-.0377	.0052
	0.90	13.86	0.00	-1.028	-.1080	-.1073	.1744	-.0348	.0065
	0.90	15.73	0.00	-1.023	-.1251	-.0856	.1799	-.0285	.0082
	0.90	17.46	0.00	-1.016	-.1493	-.0643	.1854	-.0218	.0009
	0.90	19.37	0.00	-1.005	-.1688	-.0429	.1912	-.0142	.0044
	0.90	21.27	0.00	-0.994	-.1852	-.0309	.1936	-.0103	.0065
	0.90	23.18	0.00	-0.979	-.2016	-.0232	.1969	-.0065	.0082
	0.90	25.08	0.00	-0.955	-.2199	-.0177	.1976	-.0036	.0068
	0.90	26.88	0.00	-0.933	-.2381	-.0171	.1986	-.0024	.0033
12	1.27	11.98	0.00	-1.223	-.1306	-.1131	.2447	-.0369	.0111
	1.27	13.82	0.00	-1.219	-.1497	-.0953	.2528	-.0315	.0121
	1.27	15.68	0.00	-1.214	-.1638	-.0796	.2577	-.0267	.0087
	1.27	17.39	0.00	-1.199	-.1709	-.0652	.2569	-.0226	.0037
	1.27	19.29	0.00	-1.176	-.1818	-.0515	.2551	-.0183	.0005
	1.27	21.17	0.00	-1.144	-.1921	-.0380	.2513	-.0146	-.0013
	1.27	23.06	0.00	-1.109	-.2043	-.0242	.2470	-.0112	-.0026
	1.27	24.94	0.00	-1.070	-.2261	-.0195	.2432	-.0098	-.0027
	1.27	26.74	0.00	-1.035	-.2372	-.0083	.2386	-.0064	-.0048

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
13	0.60	17.00	-3.84	-0.812	-.1673	.0118	.1073	.0009	-.0236
	0.60	17.00	-1.97	-0.811	-.1589	.0181	.1002	-.0003	-.0015
	0.60	17.00	-0.14	-0.812	-.1597	.0155	.0990	-.0007	.0097
	0.60	17.00	1.78	-0.832	-.1561	-.0106	.0984	-.0115	.0329
	0.60	17.00	3.70	-0.866	-.1529	-.0284	.0981	-.0197	.0572
	0.60	17.00	5.64	-0.890	-.1503	-.0702	.1006	-.0263	.0657
	0.60	17.00	7.58	-0.901	-.1371	-.1380	.1018	-.0423	.0653
	0.60	17.00	9.48	-0.889	-.1420	-.2261	.1038	-.0614	.0529
14	0.90	17.00	-4.00	-1.015	-.1604	.0161	.1847	.0006	.0023
	0.90	17.00	-2.13	-1.012	-.1485	-.0130	.1787	-.0086	.0021
	0.90	17.00	-0.38	-1.020	-.1386	-.0716	.1808	-.0224	.0092
	0.90	17.00	1.36	-1.044	-.1256	-.1171	.1773	-.0330	.0144
	0.90	17.00	3.20	-1.060	-.1319	-.1786	.1781	-.0480	.0188
	0.90	17.00	5.02	-1.080	-.1292	-.2173	.1814	-.0634	.0263
	0.90	17.00	6.94	-1.092	-.1247	-.2390	.1824	-.0687	.0427
	0.90	17.00	8.85	-1.092	-.1384	-.2813	.1875	-.0815	.0376
15	1.27	17.00	-3.96	-1.180	-.2038	.0280	.2634	-.0074	.0045
	1.27	17.00	-2.13	-1.177	-.1855	-.0166	.2550	-.0154	.0057
	1.27	17.00	-0.38	-1.198	-.1763	-.0682	.2577	-.0239	.0056
	1.27	17.00	1.41	-1.220	-.1764	-.1383	.2627	-.0370	.0051
	1.27	17.00	3.39	-1.243	-.1738	-.2269	.2659	-.0576	.0027
	1.27	17.00	5.36	-1.252	-.1707	-.3019	.2663	-.0790	-.0027
	1.27	17.00	7.34	-1.251	-.1640	-.3908	.2668	-.0987	-.0161
	1.27	17.00	9.31	-1.240	-.1584	-.4889	.2629	-.1156	-.0389
16	0.60	11.94	0.00	-0.884	.0494	-.0291	.0374	-.0157	.0096
	0.60	13.81	0.00	-0.877	.0215	-.0177	.0387	-.0147	.0111
	0.60	15.68	0.00	-0.862	.0036	-.0103	.0393	-.0133	.0130
	0.60	17.40	0.00	-0.851	-.0134	-.0112	.0408	-.0135	.0092
	0.60	19.20	0.00	-0.836	-.0327	-.0123	.0425	-.0114	.0049
	0.60	21.01	0.00	-0.821	-.0527	-.0049	.0450	-.0091	.0039
	0.60	22.72	0.00	-0.812	-.0672	.0022	.0501	-.0057	.0059
	0.60	24.61	0.00	-0.784	-.0815	.0053	.0508	-.0048	.0046
	0.60	26.45	0.00	-0.751	-.0979	.0093	.0498	-.0040	.0036

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
17	0.90	12.86	0.00	-1.156	.0822	-.0338	.0825	-.0149	.0035
	0.90	14.85	0.00	-1.151	.0558	-.0298	.0884	-.0134	.0041
	0.90	16.77	0.00	-1.133	.0341	-.0297	.0913	-.0127	.0010
	0.90	18.70	0.00	-1.116	.0066	-.0120	.0979	-.0109	.0030
	0.90	20.61	0.00	-1.102	-.0249	-.0084	.1072	-.0083	.0058
	0.90	22.54	0.00	-1.082	-.0534	-.0112	.1138	-.0078	.0038
	0.90	24.46	0.00	-1.060	-.0791	-.0107	.1185	-.0074	.0036
	0.90	26.33	0.00	-1.026	-.1013	-.0109	.1200	-.0067	.0022
18	1.27	11.92	0.00	-1.320	-.0166	-.0499	.1704	-.0174	.0019
	1.27	13.78	0.00	-1.308	-.0477	-.0483	.1798	-.0169	.0020
	1.27	15.58	0.00	-1.290	-.0764	-.0429	.1875	-.0156	.0023
	1.27	17.32	0.00	-1.271	-.0983	-.0369	.1921	-.0137	.0019
	1.27	19.05	0.00	-1.246	-.1208	-.0341	.1950	-.0126	.0002
	1.27	20.95	0.00	-1.216	-.1446	-.0293	.1978	-.0112	.0001
	1.27	22.76	0.00	-1.184	-.1663	-.0246	.1988	-.0096	.0000
	1.27	24.67	0.00	-1.145	-.1929	-.0240	.1979	-.0091	.0004
	1.27	26.50	0.00	-1.102	-.2172	-.0196	.1952	-.0081	.0008
19	0.60	17.00	-3.98	-0.852	-.0202	.0547	.0432	.0070	-.0036
	0.60	17.00	-2.10	-0.851	-.0175	.0227	.0409	-.0051	.0000
	0.60	17.00	-0.37	-0.847	-.0090	-.0151	.0381	-.0141	.0150
	0.60	17.00	1.37	-0.849	-.0118	-.0626	.0404	-.0247	.0150
	0.60	17.00	3.10	-0.850	-.0122	-.0911	.0415	-.0350	.0239
	0.60	17.00	4.92	-0.844	-.0142	-.1144	.0422	-.0437	.0336
	0.60	17.00	6.83	-0.851	-.0259	-.1054	.0509	-.0464	.0647
	0.60	17.00	8.74	-0.856	-.0235	-.1247	.0535	-.0510	.0752
20	0.90	17.00	-3.99	-1.122	.0143	.0663	.0981	.0104	.0025
	0.90	17.00	-2.10	-1.125	.0271	.0190	.0928	-.0026	.0044
	0.90	17.00	-0.24	-1.125	.0371	-.0349	.0907	-.0145	.0029
	0.90	17.00	1.72	-1.124	.0312	-.0902	.0946	-.0287	.0090
	0.90	17.00	3.65	-1.120	.0220	-.1403	.0997	-.0438	.0150
	0.90	17.00	5.60	-1.126	.0107	-.1793	.1108	-.0601	.0285
	0.90	17.00	7.53	-1.126	.0080	-.2154	.1157	-.0727	.0455
	0.90	17.00	9.44	-1.129	-.0019	-.2612	.1252	-.0884	.0546

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
21	1.27	17.00	-3.93	-1.279	-.1041	.0706	.1957	.0073	-.0013
	1.27	17.00	-2.08	-1.269	-.0978	.0123	.1917	-.0057	.0003
	1.27	17.00	-0.12	-1.271	-.0940	-.0458	.1905	-.0153	.0029
	1.27	17.00	1.83	-1.282	-.1007	-.1094	.1965	-.0289	.0060
	1.27	17.00	3.79	-1.289	-.1102	-.1851	.2002	-.0464	.0040
	1.27	17.00	5.76	-1.288	-.1129	-.2539	.2048	-.0675	.0067
	1.27	17.00	7.72	-1.276	-.1155	-.3346	.2068	-.0884	.0013
	1.27	17.00	9.67	-1.263	-.1159	-.4230	.2087	-.1077	-.0117
22	0.60	11.96	0.00	-0.887	.0564	-.0342	.0369	-.0164	.0078
	0.60	13.81	0.00	-0.882	.0296	-.0208	.0376	-.0138	.0105
	0.60	15.60	0.00	-0.870	.0098	-.0155	.0394	-.0138	.0115
	0.60	17.33	0.00	-0.857	-.0065	-.0115	.0389	-.0129	.0093
	0.60	19.06	0.00	-0.847	-.0223	-.0122	.0407	-.0110	.0063
	0.60	20.88	0.00	-0.830	-.0405	-.0132	.0420	-.0103	.0016
	0.60	22.81	0.00	-0.814	-.0588	-.0043	.0463	-.0068	.0028
	0.60	24.72	0.00	-0.789	-.0710	.0038	.0471	-.0046	.0042
	0.60	26.51	0.00	-0.759	-.0860	.0098	.0459	-.0059	.0049
23	0.90	11.83	0.00	-1.172	.1079	-.0374	.0739	-.0165	.0044
	0.90	13.80	0.00	-1.161	.0850	-.0343	.0798	-.0148	.0036
	0.90	15.69	0.00	-1.150	.0641	-.0330	.0826	-.0135	.0027
	0.90	17.63	0.00	-1.132	.0406	-.0293	.0867	-.0131	.0023
	0.90	19.55	0.00	-1.106	.0079	-.0198	.0922	-.0116	.0032
	0.90	21.48	0.00	-1.094	-.0201	-.0089	.0994	-.0089	.0025
	0.90	23.41	0.00	-1.084	-.0433	-.0097	.1075	-.0070	.0038
	0.90	25.32	0.00	-1.055	-.0662	-.0102	.1096	-.0061	.0023
24	1.27	11.87	0.00	-1.333	-.0007	-.0472	.1694	-.0164	.0012
	1.27	13.72	0.00	-1.320	-.0341	-.0448	.1791	-.0165	.0016
	1.27	15.52	0.00	-1.302	-.0641	-.0411	.1871	-.0152	.0008
	1.27	17.26	0.00	-1.282	-.0894	-.0350	.1930	-.0133	.0010
	1.27	18.99	0.00	-1.260	-.1113	-.0311	.1966	-.0119	-.0006
	1.27	20.90	0.00	-1.230	-.1353	-.0269	.2001	-.0103	-.0018
	1.27	22.82	0.00	-1.195	-.1589	-.0211	.2014	-.0093	-.0012
	1.27	24.73	0.00	-1.156	-.1846	-.0162	.2012	-.0081	-.0006
	1.27	26.55	0.00	-1.111	-.2161	-.0140	.2001	-.0075	.0006

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
25	0.60	17.00	-4.03	-0.859	-.0070	.0652	.0393	.0090	-.0021
	0.60	17.00	-2.15	-0.854	-.0064	.0227	.0387	-.0035	.0075
	0.60	17.00	-0.31	-0.858	.0026	-.0221	.0376	-.0152	.0121
	0.60	17.00	1.61	-0.859	.0000	-.0638	.0394	-.0247	.0150
	0.60	17.00	3.54	-0.854	.0012	-.1028	.0378	-.0374	.0240
	0.60	17.00	5.47	-0.857	-.0023	-.1228	.0424	-.0467	.0396
	0.60	17.00	7.38	-0.860	-.0134	-.1029	.0505	-.0476	.0718
	0.60	17.00	9.28	-0.868	-.0061	-.1397	.0547	-.0524	.0752
26	0.90	17.00	-4.04	-1.137	.0292	.0681	.0913	.0120	.0005
	0.90	17.00	-2.14	-1.133	.0439	.0103	.0848	-.0036	.0037
	0.90	17.00	-0.39	-1.133	.0530	-.0359	.0833	-.0137	.0024
	0.90	17.00	1.56	-1.141	.0496	-.0906	.0876	-.0282	.0072
	0.90	17.00	3.51	-1.142	.0402	-.1507	.0919	-.0451	.0098
	0.90	17.00	5.46	-1.137	.0387	-.1883	.0970	-.0608	.0234
	0.90	17.00	7.40	-1.143	.0345	-.2257	.1036	-.0753	.0415
	0.90	17.00	9.30	-1.143	.0272	-.2649	.1130	-.0903	.0557
27	1.27	17.00	-4.04	-1.294	-.0961	.0798	.1963	.0101	-.0007
	1.27	17.00	-2.10	-1.286	-.0870	.0148	.1919	-.0043	-.0016
	1.27	17.00	-0.35	-1.282	-.0877	-.0359	.1911	-.0132	.0019
	1.27	17.00	1.52	-1.294	-.0897	-.0957	.1957	-.0254	.0048
	1.27	17.00	3.48	-1.304	-.0965	-.1739	.1998	-.0431	.0045
	1.27	17.00	5.46	-1.303	-.1101	-.2467	.2071	-.0634	.0041
	1.27	17.00	7.43	-1.293	-.1134	-.3280	.2111	-.0850	-.0002
	1.27	17.00	9.40	-1.281	-.1151	-.4226	.2140	-.1060	-.0134
28	0.60	12.02	0.00	-0.894	.0672	-.0249	.0362	-.0119	.0102
	0.60	13.89	0.00	-0.891	.0370	-.0221	.0382	-.0141	.0092
	0.60	15.69	0.00	-0.879	.0158	-.0127	.0385	-.0130	.0109
	0.60	17.52	0.00	-0.865	.0003	-.0086	.0376	-.0119	.0115
	0.60	19.42	0.00	-0.851	-.0162	-.0083	.0387	-.0107	.0074
	0.60	21.32	0.00	-0.834	-.0341	-.0069	.0402	-.0097	.0029
	0.60	23.24	0.00	-0.818	-.0498	.0052	.0435	-.0059	.0021
	0.60	25.15	0.00	-0.799	-.0608	.0050	.0453	-.0042	.0047
	0.60	26.92	0.00	-0.768	-.0732	.0077	.0446	-.0066	.0060

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
29	0.90	11.84	0.00	-1.205	.1183	-.0340	.0734	-.0152	.0044
	0.90	13.63	0.00	-1.195	.0966	-.0269	.0768	-.0131	.0035
	0.90	15.42	0.00	-1.190	.0781	-.0215	.0811	-.0123	.0025
	0.90	17.13	0.00	-1.170	.0607	-.0182	.0833	-.0111	.0017
	0.90	19.03	0.00	-1.150	.0342	-.0119	.0876	-.0096	.0027
	0.90	20.92	0.00	-1.127	.0059	-.0089	.0912	-.0093	.0000
	0.90	22.82	0.00	-1.111	-.0167	-.0025	.0972	-.0077	.0004
	0.90	24.71	0.00	-1.088	-.0381	.0049	.1019	-.0049	.0035
	0.90	26.52	0.00	-1.059	-.0575	.0057	.1022	-.0045	.0012
30	1.27	11.93	0.00	-1.347	.0096	-.0446	.1704	-.0153	.0020
	1.27	13.77	0.00	-1.340	-.0179	-.0440	.1801	-.0160	.0020
	1.27	15.63	0.00	-1.332	-.0472	-.0418	.1912	-.0152	.0012
	1.27	17.53	0.00	-1.315	-.0723	-.0355	.1985	-.0136	.0013
	1.27	19.43	0.00	-1.289	-.0984	-.0268	.2025	-.0120	.0007
	1.27	21.31	0.00	-1.259	-.1197	-.0199	.2034	-.0106	.0014
	1.27	23.19	0.00	-1.221	-.1418	-.0123	.2021	-.0086	.0016
	1.27	25.07	0.00	-1.180	-.1663	-.0069	.1989	-.0070	.0022
	1.27	26.84	0.00	-1.138	-.1804	-.0010	.1914	-.0053	.0023
31	0.60	17.00	-4.35	-0.869	.0035	.0682	.0401	.0117	-.0054
	0.60	17.00	-2.40	-0.867	.0040	.0296	.0389	-.0004	.0079
	0.60	17.00	-0.57	-0.869	.0100	-.0133	.0380	-.0139	.0116
	0.60	17.00	1.36	-0.865	.0121	-.0583	.0378	-.0239	.0160
	0.60	17.00	3.30	-0.865	.0137	-.1019	.0365	-.0369	.0211
	0.60	17.00	5.23	-0.855	.0116	-.1268	.0408	-.0465	.0353
	0.60	17.00	7.14	-0.866	.0101	-.1253	.0460	-.0478	.0598
	0.60	17.00	9.04	-0.870	.0083	-.1362	.0546	-.0546	.0749
32	.90	17.00	-5.04	-1.160	.0405	.1024	.0911	.0225	-.0096
	0.90	17.00	-3.19	-1.155	.0510	.0578	.0856	.0070	-.0024
	0.90	17.00	-1.39	-1.156	.0648	.0067	.0813	-.0046	.0037
	0.90	17.00	0.36	-1.160	.0660	-.0487	.0831	-.0179	.0018
	0.90	17.00	2.10	-1.160	.0674	-.0995	.0846	-.0312	.0078
	0.90	17.00	3.94	-1.154	.0624	-.1573	.0886	-.0486	.0102
	0.90	17.00	5.89	-1.147	.0555	-.2095	.0950	-.0664	.0196
	0.90	17.00	7.80	-1.152	.0539	-.2388	.1033	-.0797	.0422
	0.90	17.00	9.64	-1.152	.0493	-.2800	.1087	-.0952	.0542

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
33	1.27	17.00	-3.94	-1.325	-.0791	.0775	.2010	.0101	-.0040
	1.27	17.00	-2.10	-1.322	-.0671	.0137	.1968	-.0040	-.0021
	1.27	17.00	-0.17	-1.322	-.0648	-.0450	.1966	-.0152	.0021
	1.27	17.00	1.76	-1.333	-.0699	-.1090	.2022	-.0294	.0040
	1.27	17.00	3.69	-1.343	-.0769	-.1794	.2061	-.0458	.0061
	1.27	17.00	5.64	-1.346	-.0791	-.2587	.2099	-.0681	.0052
	1.27	17.00	7.58	-1.334	-.0724	-.3440	.2097	-.0898	-.0016
	1.27	17.00	9.50	-1.314	-.0689	-.4257	.2086	-.1085	-.0092
34	0.60	11.93	0.00	-0.869	.0831	-.0183	.0306	-.0072	.0063
	0.60	13.92	0.00	-0.863	.0435	-.0129	.0364	-.0118	.0088
	0.60	15.80	0.00	-0.853	.0138	-.0053	.0371	-.0117	.0113
	0.60	17.73	0.00	-0.838	-.0093	-.0023	.0383	-.0112	.0115
	0.60	19.63	0.00	-0.819	-.0310	-.0085	.0398	-.0110	.0077
	0.60	21.54	0.00	-0.801	-.0516	-.0029	.0426	-.0084	.0029
	0.60	23.47	0.00	-0.787	-.0700	-.0012	.0482	-.0055	.0033
	0.60	25.36	0.00	-0.759	-.0819	.0051	.0495	-.0060	.0051
35	0.90	11.87	0.00	-1.155	.1188	-.0333	.0686	-.0149	.0029
	0.90	13.79	0.00	-1.151	.0986	-.0250	.0730	-.0120	.0026
	0.90	15.59	0.00	-1.142	.0731	-.0194	.0784	-.0109	.0027
	0.90	17.51	0.00	-1.124	.0481	-.0167	.0828	-.0097	.0030
	0.90	19.43	0.00	-1.105	.0179	-.0106	.0887	-.0100	.0017
	0.90	21.35	0.00	-1.082	-.0110	-.0017	.0969	-.0073	.0050
	0.90	23.28	0.00	-1.064	-.0429	-.0035	.1047	-.0058	.0047
	0.90	25.18	0.00	-1.035	-.0694	-.0063	.1085	-.0059	.0033
36	1.27	11.88	0.00	-1.303	-.0054	-.0367	.1622	-.0137	.0005
	1.27	13.73	0.00	-1.287	-.0402	-.0311	.1713	-.0122	.0004
	1.27	15.62	0.00	-1.269	-.0716	-.0314	.1798	-.0126	.0011
	1.27	17.45	0.00	-1.245	-.0993	-.0268	.1859	-.0115	.0015
	1.27	19.37	0.00	-1.219	-.1270	-.0222	.1907	-.0102	.0006
	1.27	21.29	0.00	-1.187	-.1555	-.0217	.1949	-.0091	.0012
	1.27	23.21	0.00	-1.150	-.1813	-.0170	.1959	-.0082	.0016
	1.27	25.10	0.00	-1.108	-.2003	-.0136	.1923	-.0072	.0022
	1.27	26.91	0.00	-1.065	-.2150	-.0100	.1861	-.0068	.0024

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
37	0.60	17.00	-4.03	-0.839	-.0007	.0586	.0382	.0097	.0009
	0.60	17.00	-2.16	-0.843	.0035	.0264	.0374	-.0029	.0047
	0.60	17.00	-0.35	-0.841	.0044	-.0112	.0369	-.0122	.0118
	0.60	17.00	1.55	-0.841	.0053	-.0493	.0379	-.0223	.0155
	0.60	17.00	3.45	-0.835	-.0003	-.0928	.0386	-.0351	.0188
	0.60	17.00	5.34	-0.831	-.0029	-.1118	.0397	-.0423	.0326
	0.60	17.00	7.24	-0.829	-.0077	-.1244	.0462	-.0508	.0568
	0.60	17.00	9.11	-0.831	-.0107	-.1121	.0493	-.0497	.0742
38	0.90	17.00	-4.07	-1.122	.0410	.0680	.0857	.0123	.0002
	0.90	17.00	-2.09	-1.119	.0511	.0241	.0819	-.0006	.0033
	0.90	17.00	-0.14	-1.117	.0587	-.0275	.0791	-.0124	.0027
	0.90	17.00	1.80	-1.116	.0631	-.0761	.0818	-.0256	.0070
	0.90	17.00	3.74	-1.107	.0524	-.1258	.0863	-.0409	.0124
	0.90	17.00	5.69	-1.097	.0416	-.1695	.0918	-.0551	.0190
	0.90	17.00	7.63	-1.095	.0317	-.2200	.0993	-.0706	.0313
	0.90	17.00	9.50	-1.100	.0288	-.2348	.1068	-.0805	.0511
39	1.27	17.00	-3.95	-1.261	-.0991	.0736	.1859	.0103	-.0035
	1.27	17.00	-2.09	-1.255	-.0933	.0158	.1843	-.0028	-.0022
	1.27	17.00	-0.33	-1.249	-.0915	-.0307	.1826	-.0119	.0022
	1.27	17.00	1.43	-1.259	-.0960	-.0843	.1863	-.0232	.0059
	1.27	17.00	3.38	-1.270	-.1016	-.1530	.1897	-.0394	.0058
	1.27	17.00	5.34	-1.268	-.1101	-.2148	.1950	-.0568	.0078
	1.27	17.00	7.30	-1.264	-.1104	-.2822	.1977	-.0767	.0083
	1.27	17.00	9.25	-1.254	-.1099	-.3615	.1979	-.0965	.0008
40	0.60	11.99	0.00	-0.877	.0897	-.0186	.0301	-.0078	.0047
	0.60	13.83	0.00	-0.866	.0628	-.0137	.0337	-.0072	.0071
	0.60	15.62	0.00	-0.861	.0296	-.0110	.0342	-.0110	.0119
	0.60	17.36	0.00	-0.852	.0079	-.0038	.0369	-.0112	.0111
	0.60	19.17	0.00	-0.835	-.0137	-.0059	.0379	-.0110	.0110
	0.60	20.89	0.00	-0.824	-.0317	-.0066	.0397	-.0100	.0030
	0.60	22.72	0.00	-0.800	-.0513	.0009	.0414	-.0072	.0027
	0.60	24.62	0.00	-0.787	-.0649	.0065	.0475	-.0043	.0051
	0.60	26.45	0.00	-0.750	-.0822	.0076	.0467	-.0059	.0067

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
41	0.90	11.87	0.00	-1.178	.1367	-.0329	.0662	-.0136	.0025
	0.90	13.72	0.00	-1.174	.1156	-.0221	.0701	-.0116	.0035
	0.90	15.59	0.00	-1.160	.0909	-.0171	.0729	-.0105	.0027
	0.90	17.32	0.00	-1.148	.0734	-.0141	.0777	-.0091	.0026
	0.90	19.14	0.00	-1.126	.0474	-.0115	.0812	-.0092	.0020
	0.90	21.05	0.00	-1.106	.0159	-.0069	.0881	-.0078	.0023
	0.90	22.97	0.00	-1.085	-.0115	-.0018	.0943	-.0069	.0028
	0.90	24.87	0.00	-1.058	-.0405	.0000	.0998	-.0055	.0039
	0.90	26.67	0.00	-1.026	-.0627	-.0044	.1018	-.0058	.0031
42	1.27	11.93	0.00	-1.342	.0038	-.0366	.1682	-.0125	-.0001
	1.27	13.84	0.00	-1.327	-.0303	-.0299	.1780	-.0125	.0019
	1.27	15.72	0.00	-1.304	-.0625	-.0288	.1855	-.0122	.0001
	1.27	17.53	0.00	-1.282	-.0885	-.0233	.1910	-.0109	.0002
	1.27	19.43	0.00	-1.255	-.1141	-.0178	.1953	-.0096	-.0006
	1.27	21.32	0.00	-1.222	-.1384	-.0130	.1981	-.0082	-.0003
	1.27	23.21	0.00	-1.188	-.1624	-.0106	.2001	-.0073	.0000
	1.27	25.08	0.00	-1.149	-.1901	-.0075	.2011	-.0065	.0002
	1.27	26.88	0.00	-1.107	-.2178	-.0068	.1997	-.0063	.0012
43	0.60	17.00	-4.03	-0.851	.0136	.0541	.0395	.0101	-.0038
	0.60	17.00	-2.16	-0.852	.0147	.0226	.0373	-.0018	.0051
	0.60	17.00	-0.43	-0.854	.0116	-.0109	.0358	-.0117	.0105
	0.60	17.00	1.41	-0.852	.0146	-.0502	.0349	-.0217	.0154
	0.60	17.00	3.32	-0.847	.0103	-.0973	.0360	-.0350	.0180
	0.60	17.00	5.25	-0.839	.0094	-.1221	.0373	-.0440	.0271
	0.60	17.00	7.16	-0.839	.0070	-.1216	.0459	-.0532	.0629
	0.60	17.00	9.06	-0.838	.0034	-.1303	.0500	-.0578	.0795
44	0.90	17.00	-4.06	-1.148	.0584	.0736	.0808	.0152	.0006
	0.90	17.00	-2.19	-1.142	.0651	.0283	.0782	.0007	.0022
	0.90	17.00	-0.36	-1.139	.0722	-.0202	.0757	-.0108	.0023
	0.90	17.00	1.37	-1.136	.0763	-.0666	.0770	-.0227	.0035
	0.90	17.00	3.20	-1.142	.0794	-.1148	.0809	-.0371	.0112
	0.90	17.00	5.13	-1.124	.0684	-.1665	.0849	-.0526	.0146
	0.90	17.00	7.06	-1.120	.0580	-.2172	.0923	-.0699	.0227
	0.90	17.00	8.96	-1.123	.0535	-.2414	.0999	-.0810	.0439

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
45	1.27	17.00	-4.04	-1.307	-.0901	.0832	.1952	.0121	-.0020
	1.27	17.00	-2.19	-1.299	-.0835	.0222	.1922	-.0014	-.0025
	1.27	17.00	-0.33	-1.292	-.0822	-.0307	.1899	-.0120	.0006
	1.27	17.00	1.61	-1.301	-.0860	-.0904	.1941	-.0246	.0043
	1.27	17.00	3.54	-1.312	-.0918	-.1625	.1978	-.0411	.0046
	1.27	17.00	5.49	-1.311	-.1026	-.2302	.2029	-.0593	.0028
	1.27	17.00	7.43	-1.303	-.1042	-.3025	.2060	-.0797	.0017
	1.27	17.00	9.37	-1.291	-.1039	-.3868	.2077	-.0995	-.0076
46	0.60	12.06	0.00	-0.879	.0955	-.0202	.0283	-.0081	.0052
	0.60	13.95	0.00	-0.868	.0699	-.0154	.0312	-.0073	.0055
	0.60	15.74	0.00	-0.866	.0343	-.0118	.0354	-.0117	.0087
	0.60	17.47	0.00	-0.852	.0111	-.0059	.0354	-.0114	.0116
	0.60	19.20	0.00	-0.839	-.0075	-.0045	.0356	-.0116	.0076
	0.60	20.92	0.00	-0.819	-.0256	-.0009	.0356	-.0097	.0068
	0.60	22.73	0.00	-0.804	-.0464	.0027	.0391	-.0079	.0036
	0.60	24.64	0.00	-0.794	-.0597	.0071	.0446	-.0050	.0013
	0.60	26.47	0.00	-0.760	-.0737	.0052	.0446	-.0064	.0032
47	0.90	11.93	0.00	-1.185	.1373	-.0268	.0675	-.0136	.0015
	0.90	13.78	0.00	-1.176	.1172	-.0182	.0707	-.0110	.0037
	0.90	15.64	0.00	-1.170	.0933	-.0141	.0749	-.0095	.0031
	0.90	17.45	0.00	-1.153	.0693	-.0105	.0790	-.0087	.0039
	0.90	19.35	0.00	-1.129	.0477	-.0095	.0815	-.0085	.0021
	0.90	21.24	0.00	-1.104	.0191	-.0041	.0874	-.0087	-.0010
	0.90	23.14	0.00	-1.082	-.0113	-.0022	.0930	-.0072	.0000
	0.90	25.03	0.00	-1.060	-.0360	.0045	.0990	-.0051	.0048
	0.90	26.83	0.00	-1.030	-.0578	.0028	.1013	-.0048	.0025
48	1.27	11.97	0.00	-1.365	.0184	-.0319	.1713	-.0116	.0009
	1.27	13.87	0.00	-1.354	-.0116	-.0322	.1802	-.0122	.0000
	1.27	15.74	0.00	-1.342	-.0387	-.0319	.1887	-.0123	-.0020
	1.27	17.47	0.00	-1.323	-.0628	-.0261	.1950	-.0114	-.0002
	1.27	19.27	0.00	-1.296	-.0844	-.0223	.1977	-.0102	.0003
	1.27	21.16	0.00	-1.264	-.1071	-.0177	.1990	-.0093	.0009
	1.27	23.05	0.00	-1.225	-.1337	-.0063	.1988	-.0073	.0007
	1.27	24.93	0.00	-1.182	-.1526	-.0014	.1947	-.0060	.0011
	1.27	26.72	0.00	-1.138	-.1710	.0005	.1880	-.0049	.0020

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
49	0.60	17.00	-4.07	-0.848	.0233	.0568	.0376	.0136	-.0054
	0.60	17.00	-2.22	-0.853	.0225	.0317	.0361	.0014	.0049
	0.60	17.00	-0.49	-0.852	.0170	-.0095	.0346	-.0114	.0102
	0.60	17.00	1.32	-0.854	.0182	-.0428	.0351	-.0205	.0190
	0.60	17.00	3.22	-0.856	.0189	-.0899	.0346	-.0344	.0191
	0.60	17.00	5.14	-0.845	.0158	-.1273	.0345	-.0453	.0271
	0.60	17.00	7.03	-0.847	.0133	-.1267	.0416	-.0548	.0441
	0.60	17.00	8.90	-0.849	.0193	-.1053	.0443	-.0455	.0667
50	0.90	17.00	-4.14	-1.151	.0631	.0822	.0815	.0173	.0000
	0.90	17.00	-2.28	-1.152	.0684	.0384	.0792	.0022	.0017
	0.90	17.00	-0.44	-1.145	.0779	-.0156	.0762	-.0102	.0017
	0.90	17.00	1.31	-1.143	.0800	-.0674	.0772	-.0228	.0024
	0.90	17.00	3.04	-1.137	.0805	-.1084	.0802	-.0357	.0097
	0.90	17.00	4.98	-1.125	.0720	-.1600	.0849	-.0517	.0136
	0.90	17.00	6.91	-1.120	.0617	-.2107	.0919	-.0687	.0209
	0.90	17.00	8.82	-1.127	.0549	-.2368	.1008	-.0797	.0428
51	1.27	17.00	-4.06	-1.335	-.0674	.0886	.1972	.0139	-.0042
	1.27	17.00	-2.16	-1.330	-.0587	.0235	.1943	-.0007	-.0051
	1.27	17.00	-0.42	-1.325	-.0562	-.0251	.1920	-.0115	.0001
	1.27	17.00	1.51	-1.333	-.0580	-.0854	.1960	-.0243	.0043
	1.27	17.00	3.44	-1.342	-.0630	-.1552	.2002	-.0405	.0049
	1.27	17.00	5.37	-1.342	-.0682	-.2207	.2031	-.0584	.0060
	1.27	17.00	7.31	-1.333	-.0672	-.2961	.2030	-.0781	.0048
	1.27	17.00	9.22	-1.315	-.0567	-.3708	.2003	-.0974	-.0019
52	0.60	11.92	0.00	-0.853	.1082	-.0323	.0252	-.0101	.0026
	0.60	13.81	0.00	-0.839	.0821	-.0250	.0279	-.0084	.0043
	0.60	15.63	0.00	-0.826	.0567	-.0184	.0298	-.0073	.0055
	0.60	17.38	0.00	-0.817	.0199	-.0152	.0334	-.0107	.0110
	0.60	19.30	0.00	-0.802	-.0113	-.0077	.0366	-.0114	.0092
	0.60	21.23	0.00	-0.787	-.0409	-.0106	.0391	-.0111	.0066
	0.60	23.16	0.00	-0.771	-.0611	-.0108	.0449	-.0094	.0006
	0.60	25.07	0.00	-0.749	-.0788	-.0073	.0485	-.0065	.0032
	0.60	26.84	0.00	-0.714	-.0963	.0051	.0478	-.0064	.0046

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
53	0.90	11.78	0.00	-1.119	.1575	-.0274	.0544	-.0120	.0051
	0.90	13.67	0.00	-1.109	.1373	-.0262	.0585	-.0116	.0028
	0.90	15.47	0.00	-1.092	.1108	-.0218	.0609	-.0096	.0041
	0.90	17.22	0.00	-1.081	.0911	-.0104	.0650	-.0083	.0033
	0.90	19.04	0.00	-1.071	.0686	.0005	.0711	-.0062	.0057
	0.90	20.96	0.00	-1.045	.0407	.0070	.0754	-.0047	.0077
	0.90	22.90	0.00	-1.019	.0079	.0056	.0816	-.0045	.0076
	0.90	24.81	0.00	-0.993	-.0270	.0018	.0882	-.0042	.0054
	0.90	26.64	0.00	-0.959	-.0566	-.0036	.0913	-.0050	.0041
54	1.27	11.84	0.00	-1.369	.0721	-.0187	.1598	-.0093	.0016
	1.27	13.74	0.00	-1.351	.0370	-.0208	.1656	-.0088	.0000
	1.27	15.68	0.00	-1.328	.0024	-.0221	.1714	-.0085	-.0007
	1.27	17.66	0.00	-1.304	-.0298	-.0202	.1771	-.0095	-.0014
	1.27	19.61	0.00	-1.272	-.0633	-.0179	.1824	-.0092	-.0015
	1.27	21.57	0.00	-1.230	-.0969	-.0092	.1860	-.0081	.0000
	1.27	23.54	0.00	-1.188	-.1257	-.0038	.1870	-.0071	.0008
	1.27	25.47	0.00	-1.143	-.1537	-.0005	.1870	-.0061	.0016
55	0.60	17.00	-3.98	-0.817	.0350	.0520	.0298	.0133	.0010
	0.60	17.00	-2.18	-0.820	.0363	.0181	.0315	.0013	.0004
	0.60	17.00	-0.25	-0.816	.0294	-.0089	.0327	-.0091	.0123
	0.60	17.00	1.67	-0.823	.0205	-.0480	.0342	-.0228	.0155
	0.60	17.00	3.58	-0.820	.0176	-.0782	.0354	-.0318	.0203
	0.60	17.00	5.51	-0.797	.0173	-.1149	.0330	-.0437	.0288
	0.60	17.00	7.41	-0.796	.0114	-.0952	.0384	-.0459	.0576
	0.60	17.00	9.29	-0.795	.0081	-.1163	.0441	-.0535	.0674
56	0.90	17.00	-4.11	-1.082	.0890	.0550	.0673	.0102	-.0058
	0.90	17.00	-2.24	-1.093	.0988	.0192	.0661	.0005	.0009
	0.90	17.00	-0.50	-1.084	.0968	-.0152	.0651	-.0082	.0014
	0.90	17.00	1.23	-1.085	.0994	-.0394	.0642	-.0166	.0097
	0.90	17.00	2.96	-1.086	.0964	-.0703	.0679	-.0270	.0159
	0.90	17.00	4.79	-1.076	.0965	-.1110	.0702	-.0404	.0188
	0.90	17.00	6.72	-1.061	.0860	-.1493	.0731	-.0524	.0249
	0.90	17.00	8.63	-1.053	.0866	-.1896	.0762	-.0661	.0307

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
57	1.27	17.00	-4.08	-1.324	-.0278	.0788	.1773	.0157	-.0053
	1.27	17.00	-2.17	-1.319	-.0244	.0282	.1752	.0025	-.0034
	1.27	17.00	-0.24	-1.316	-.0214	-.0212	.1749	-.0096	-.0007
	1.27	17.00	1.59	-1.316	-.0212	-.0700	.1757	-.0216	.0000
	1.27	17.00	3.50	-1.323	-.0250	-.1159	.1790	-.0338	.0054
	1.27	17.00	5.42	-1.324	-.0287	-.1653	.1812	-.0478	.0076
	1.27	17.00	7.34	-1.321	-.0328	-.2277	.1848	-.0625	.0085
	1.27	17.00	9.24	-1.316	-.0360	-.2824	.1867	-.0782	.0068
58	0.60	12.06	0.00	-0.146	-.1222	-.0485	.1171	-.0162	-.0239
	0.60	13.90	0.00	-0.136	-.1256	-.0533	.1115	-.0167	-.0275
	0.60	15.68	0.00	-0.131	-.1291	-.0579	.1090	-.0168	-.0306
	0.60	17.51	0.00	-0.116	-.1277	-.0515	.0990	-.0156	-.0269
	0.60	19.23	0.00	-0.105	-.1295	-.0504	.0924	-.0146	-.0256
	0.60	20.95	0.00	-0.102	-.1296	-.0510	.0890	-.0145	-.0239
	0.60	22.69	0.00	-0.102	-.1340	-.0535	.0868	-.0147	-.0237
	0.60	24.41	0.00	-0.101	-.1354	-.0495	.0836	-.0143	-.0196
59	0.90	12.05	0.00	-0.219	-.1182	-.0439	.1627	-.0195	-.0197
	0.90	13.86	0.00	-0.208	-.1215	-.0532	.1573	-.0206	-.0229
	0.90	15.74	0.00	-0.200	-.1216	-.0633	.1507	-.0214	-.0277
	0.90	17.37	0.00	-0.193	-.1247	-.0683	.1446	-.0213	-.0318
	0.90	19.11	0.00	-0.184	-.1277	-.0701	.1389	-.0208	-.0317
	0.90	20.83	0.00	-0.175	-.1284	-.0761	.1330	-.0215	-.0323
	0.90	22.56	0.00	-0.176	-.1295	-.0828	.1324	-.0226	-.0348
	0.90	24.30	0.00	-0.179	-.1286	-.0842	.1338	-.0230	-.0350
60	0.90	26.01	0.00	-0.171	-.1269	-.0718	.1300	-.0201	-.0310
	1.27	12.05	0.00	-0.231	-.0687	-.0062	.1697	-.0132	-.0067
	1.27	13.92	0.00	-0.227	-.0699	-.0045	.1678	-.0142	-.0040
	1.27	15.81	0.00	-0.234	-.0743	-.0261	.1744	-.0200	-.0113
	1.27	17.50	0.00	-0.222	-.0765	-.0212	.1667	-.0187	-.0103
	1.27	19.21	0.00	-0.202	-.0768	-.0150	.1539	-.0164	-.0055
	1.27	20.92	0.00	-0.186	-.0799	-.0133	.1456	-.0148	-.0028
	1.27	22.63	0.00	-0.165	-.0825	-.0063	.1326	-.0097	.0000
	1.27	24.34	0.00	-0.145	-.0841	-.0020	.1200	-.0074	.0038
	1.27	26.22	0.00	-0.138	-.0855	.0004	.1129	-.0068	.0040

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
61	0.60	12.04	0.00	-0.544	-.1442	-.0704	.1745	-.0119	.0291
	0.60	13.89	0.00	-0.547	-.1518	-.0904	.1804	-.0170	.0214
	0.60	15.77	0.00	-0.547	-.1624	-.1032	.1805	-.0187	.0134
	0.60	17.50	0.00	-0.537	-.1771	-.1056	.1811	-.0190	.0093
	0.60	19.22	0.00	-0.534	-.1741	-.1002	.1794	-.0179	.0074
	0.60	20.94	0.00	-0.533	-.1724	-.0987	.1815	-.0196	.0024
	0.60	22.66	0.00	-0.530	-.1703	-.0925	.1831	-.0206	-.0005
	0.60	24.38	0.00	-0.524	-.1739	-.0830	.1836	-.0208	-.0005
	0.60	26.18	0.00	-0.517	-.1785	-.0784	.1816	-.0221	.0001
62	0.90	12.05	0.00	-0.708	-.0592	-.1174	.2015	-.0218	-.0233
	0.90	13.90	0.00	-0.694	-.0696	-.1108	.2032	-.0207	-.0227
	0.90	15.78	0.00	-0.680	-.0806	-.1013	.2073	-.0190	-.0206
	0.90	17.50	0.00	-0.674	-.0906	-.0897	.2123	-.0173	-.0149
	0.90	19.32	0.00	-0.671	-.1036	-.0679	.2203	-.0140	-.0047
	0.90	21.04	0.00	-0.655	-.1188	-.0690	.2274	-.0141	-.0107
	0.90	22.77	0.00	-0.661	-.1304	-.0647	.2321	-.0138	-.0141
	0.90	24.79	0.00	-0.657	-.1402	-.0615	.2368	-.0145	-.0180
	0.90	26.28	0.00	-0.656	-.0511	-.0515	.2427	-.0145	-.0185
63	1.27	12.06	0.00	-0.825	-.0131	-.0882	.2462	-.0163	-.0146
	1.27	13.97	0.00	-0.832	-.0280	-.0899	.2624	-.0171	-.0155
	1.27	15.85	0.00	-0.819	-.0487	-.0894	.2743	-.0172	-.0176
	1.27	17.57	0.00	-0.807	-.0661	-.0809	.2834	-.0159	-.0189
	1.27	19.39	0.00	-0.792	-.0841	-.0723	.2917	-.0149	-.0177
	1.27	21.10	0.00	-0.771	-.0966	-.0616	.2979	-.0129	-.0165
	1.27	22.81	0.00	-0.755	-.1047	-.0538	.3012	-.0111	-.0170
	1.27	24.52	0.00	-0.746	-.1094	-.0416	.3005	-.0084	-.0206
	1.27	26.39	0.00	-0.730	-.1158	-.0290	.3003	-.0061	-.0189
64	0.60	17.00	-3.95	-0.581	-.1594	-.0432	.1949	-.0169	.0106
	0.60	17.00	-1.97	-0.565	-.1707	-.0686	.1884	-.0145	.0136
	0.60	17.00	-0.26	-0.550	-.1709	-.1008	.1842	-.0163	.0103
	0.60	17.00	1.46	-0.532	-.1594	-.0959	.1804	-.0129	.0109
	0.60	17.00	3.17	-0.535	-.1474	-.1039	.1773	-.0122	.0114
	0.60	17.00	4.89	-0.544	-.1389	-.1145	.1742	-.0114	.0137
	0.60	17.00	6.62	-0.533	-.1235	-.1564	.1646	-.0175	.0011
	0.60	17.00	8.33	-0.520	-.1046	-.2078	.1557	-.0249	-.0091

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
65	0.90	17.00	-4.02	-0.689	-.0991	-.0320	.2208	-.0102	-.0100
	0.90	17.00	-2.05	-0.689	-.0880	-.0714	.2128	-.0155	-.0140
	0.90	17.00	-0.33	-0.681	-.0913	-.1122	.2101	-.0216	-.0208
	0.90	17.00	1.39	-0.662	-.1012	-.1394	.2126	-.0258	-.0287
	0.90	17.00	3.11	-0.669	-.0935	-.1522	.2098	-.0281	-.0297
	0.90	17.00	4.84	-0.679	-.0871	-.1641	.2090	-.0322	-.0294
	0.90	17.00	6.57	-0.678	-.0704	-.1634	.2036	-.0315	-.0242
	0.90	17.00	8.29	-0.697	-.0586	-.2000	.2108	-.0309	-.0284
66	1.27	17.00	-3.97	-0.800	-.0506	.0043	.2766	.0011	-.0040
	1.27	17.00	-2.09	-0.813	-.0527	-.0442	.2785	-.0086	-.0106
	1.27	17.00	-0.39	-0.814	-.0528	-.0806	.2770	-.0150	-.0142
	1.27	17.00	1.34	-0.803	-.0571	-.1201	.2776	-.0219	-.0248
	1.27	17.00	3.05	-0.782	-.0414	-.1321	.2642	-.0215	-.0296
	1.27	17.00	4.77	-0.773	-.0352	-.1692	.2598	-.0264	-.0433
	1.27	17.00	6.50	-0.775	-.0315	-.2105	.2606	-.0332	-.0570
	1.27	17.00	8.21	-0.781	-.0269	-.2516	.2636	-.0403	-.0722
67	0.60	12.01	0.00	-0.899	-.1391	-.0808	.1238	-.0277	.0114
	0.60	13.91	0.00	-0.892	-.1634	-.0656	.1286	-.0236	.0105
	0.60	15.80	0.00	-0.879	-.1771	-.0370	.1253	-.0165	.0201
	0.60	17.52	0.00	-0.870	-.1867	-.0147	.1228	-.0103	.0247
	0.60	19.23	0.00	-0.859	-.1965	-.0036	.1223	-.0068	.0276
	0.60	21.04	0.00	-0.852	-.2041	-.0116	.1248	-.0078	.0245
	0.60	22.77	0.00	-0.837	-.2169	-.0106	.1277	-.0050	.0194
	0.60	24.50	0.00	-0.825	-.2250	.0003	.1259	.0007	.0176
68	0.60	26.40	0.00	-0.808	-.2379	.0171	.1279	.0098	.0182
	0.90	12.03	0.00	-1.131	-.1358	-.1863	.2003	-.0607	.0245
	0.90	13.90	0.00	-1.126	-.1505	-.1785	.2048	-.0575	.0231
	0.90	15.90	0.00	-1.120	-.1676	-.1765	.2087	-.0532	.0169
	0.90	17.61	0.00	-1.117	-.1815	-.1716	.2128	-.0503	.0132
	0.90	19.34	0.00	-1.111	-.1957	-.1643	.2168	-.0462	.0096
	0.90	21.06	0.00	-1.105	-.2093	-.1577	.2209	-.0425	.0048
	0.90	22.78	0.00	-1.093	-.2229	-.1397	.2265	-.0372	.0040
68	0.90	24.50	0.00	-1.073	-.2407	-.1240	.2308	-.0301	.0006
	0.90	26.59	0.00	-1.053	-.2671	-.1025	.2386	-.0205	.0012

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
69	1.27	12.03	0.00	-1.255	-.1666	-.3111	.2694	-.0796	-.0162
	1.27	13.96	0.00	-1.255	-.1835	-.3092	.2751	-.0766	-.0200
	1.27	15.86	0.00	-1.249	-.1993	-.3056	.2798	-.0738	-.0257
	1.27	17.70	0.00	-1.246	-.2120	-.3011	.2852	-.0707	-.0325
	1.27	19.41	0.00	-1.239	-.2162	-.2821	.2858	-.0635	-.0369
	1.27	21.13	0.00	-1.222	-.2249	-.2530	.2863	-.0532	-.0389
	1.27	22.86	0.00	-1.201	-.2387	-.2297	.2881	-.0447	-.0419
	1.27	24.58	0.00	-1.171	-.2540	-.2081	.2878	-.0366	-.0443
	1.27	26.46	0.00	-1.137	-.2689	-.1831	.2875	-.0288	-.0461
70	0.60	17.00	-3.96	-0.872	-.1933	-.0131	.1376	-.0075	.0021
	0.60	17.00	-2.08	-0.864	-.2088	-.0404	.1362	-.0148	.0061
	0.60	17.00	-0.25	-0.858	-.2059	-.0562	.1258	-.0195	.0178
	0.60	17.00	1.60	-0.859	-.1869	-.0534	.1146	-.0239	.0453
	0.60	17.00	3.35	-0.876	-.1727	-.0682	.1138	-.0314	.0668
	0.60	17.00	5.10	-0.899	-.1615	-.1083	.1133	-.0414	.0768
	0.60	17.00	6.87	-0.914	-.1672	-.1642	.1150	-.0506	.0686
	0.60	17.00	8.64	-0.909	-.1536	-.2259	.1147	-.0644	.0651
71	0.90	17.00	-3.92	-1.126	-.2106	-.0864	.2320	-.0273	.0099
	0.90	17.00	-2.00	-1.118	-.1946	-.1307	.2204	-.0400	.0130
	0.90	17.00	-0.26	-1.113	-.1797	-.1738	.2103	-.0517	.0156
	0.90	17.00	1.49	-1.104	-.1655	-.2183	.2028	-.0643	.0176
	0.90	17.00	3.25	-1.102	-.1613	-.2565	.2007	-.0749	.0193
	0.90	17.00	5.00	-1.107	-.1534	-.2812	.2027	-.0812	.0274
	0.90	17.00	6.75	-1.119	-.1493	-.3071	.2057	-.0886	.0269
	0.90	17.00	8.49	-1.113	-.1503	-.3284	.2012	-.0957	.0358
72	1.27	17.00	-3.86	-1.212	-.2323	-.1439	.2928	-.0310	-.0224
	1.27	17.00	-1.78	-1.239	-.2233	-.2346	.2914	-.0507	-.0308
	1.27	17.00	-0.01	-1.247	-.2198	-.3008	.2876	-.0697	-.0315
	1.27	17.00	1.76	-1.247	-.2083	-.3525	.2803	-.0838	-.0315
	1.27	17.00	3.53	-1.240	-.1996	-.4096	.2762	-.0997	-.0364
	1.27	17.00	5.32	-1.232	-.2041	-.4709	.2790	-.1155	-.0458
	1.27	17.00	7.08	-1.223	-.1859	-.5116	.2699	-.1245	-.0551
	1.27	17.00	8.84	-1.213	-.1778	-.5705	.2663	-.1381	-.0659

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
73	0.60	11.89	0.00	-0.946	.1620	-.0108	.0178	-.0264	.0423
	0.60	13.89	0.00	-0.931	.1298	-.0459	.0207	-.0259	.0199
	0.60	15.79	0.00	-0.917	.0985	-.0548	.0242	-.0241	.0122
	0.60	17.53	0.00	-0.901	.0750	-.0480	.0265	-.0215	.0194
	0.60	19.28	0.00	-0.877	.0397	-.0358	.0280	-.0216	.0174
	0.60	21.00	0.00	-0.861	.0146	-.0280	.0315	-.0190	.0166
	0.60	22.75	0.00	-0.842	-.0098	-.0289	.0363	-.0173	.0104
	0.60	24.48	0.00	-0.831	-.0326	-.0189	.0452	-.0130	.0108
	0.60	26.28	0.00	-0.816	-.0581	-.0150	.0546	-.0109	.0109
74	0.90	11.79	0.00	-1.216	.2009	-.0673	.0465	-.0397	.0247
	0.90	13.62	0.00	-1.178	.1761	-.0873	.0470	-.0417	.0143
	0.90	15.70	0.00	-1.180	.1565	-.0894	.0520	-.0410	.0127
	0.90	17.43	0.00	-1.191	.1334	-.0886	.0602	-.0400	.0172
	0.90	19.16	0.00	-1.184	.1082	-.0870	.0681	-.0391	.0175
	0.90	20.89	0.00	-1.166	.0806	-.0773	.0737	-.0359	.0201
	0.90	22.64	0.00	-1.146	.0503	-.0769	.0826	-.0344	.0185
	0.90	24.38	0.00	-1.124	.0138	-.0820	.0923	-.0317	.0133
	0.90	26.19	0.00	-1.090	-.0242	-.0855	.1006	-.0275	.0065
75	1.27	11.81	0.00	-1.479	.0778	-.2255	.1907	-.0561	-.0167
	1.27	13.79	0.00	-1.461	.0462	-.2317	.1944	-.0577	-.0189
	1.27	15.91	0.00	-1.435	.0101	-.2296	.1979	-.0569	-.0192
	1.27	17.65	0.00	-1.413	-.0229	-.2323	.2034	-.0573	-.0215
	1.27	19.39	0.00	-1.389	-.0546	-.2346	.2095	-.0574	-.0235
	1.27	21.33	0.00	-1.361	-.0888	-.2347	.2162	-.0560	-.0259
	1.27	23.07	0.00	-1.332	-.1188	-.2333	.2224	-.0541	-.0286
76	0.60	17.00	-4.00	-0.923	.0797	-.0047	.0317	-.0057	-.0021
	0.60	17.00	-2.11	-0.922	.0825	-.0292	.0301	-.0142	.0030
	0.60	17.00	-0.25	-0.914	.0832	-.0618	.0293	-.0233	.0056
	0.60	17.00	1.51	-0.902	.0812	-.0748	.0287	-.0289	.0128
	0.60	17.00	3.27	-0.888	.0882	-.0955	.0253	-.0369	.0220
	0.60	17.00	5.04	-0.878	.0907	-.1088	.0249	-.0431	.0288
	0.60	17.00	6.81	-0.872	.0925	-.1314	.0251	-.0511	.0329
	0.60	17.00	8.58	-0.868	.0934	-.1497	.0268	-.0589	.0385

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_j
77	0.90	17.00	-4.00	-1.238	.1236	-.0226	.0696	-.0184	.0047
	0.90	17.00	-2.04	-1.216	.1358	-.0593	.0630	-.0300	.0082
	0.90	17.00	-0.11	-1.186	.1453	-.0827	.0574	-.0394	.0150
	0.90	17.00	1.61	-1.172	.1519	-.1007	.0532	-.0474	.0251
	0.90	17.00	3.34	-1.165	.1564	-.1297	.0548	-.0583	.0295
	0.90	17.00	5.07	-1.152	.1580	-.1598	.0557	-.0690	.0348
	0.90	17.00	6.81	-1.127	.1562	-.1859	.0578	-.0783	.0387
	0.90	17.00	8.54	-1.120	.1546	-.2136	.0616	-.0879	.0444
78	1.27	17.00	-3.92	-1.414	-.0210	-.0985	.2031	-.0250	-.0137
	1.27	17.00	-2.01	-1.420	-.0191	-.1596	.2042	-.0400	-.0172
	1.27	17.00	-0.15	-1.421	-.0149	-.2153	.2022	-.0538	-.0202
	1.27	17.00	1.73	-1.420	-.0103	-.2680	.2011	-.0675	-.0226
	1.27	17.00	3.49	-1.420	-.0039	-.3217	.2019	-.0809	-.0275
	1.27	17.00	5.26	-1.415	.0012	-.3724	.2022	-.0938	-.0323
	1.27	17.00	7.03	-1.408	.0045	-.4258	.2026	-.1067	-.0377
	1.27	17.00	8.79	-1.395	.0091	-.4771	.2011	-.1195	-.0422
79	0.60	12.01	0.00	-0.125	-.1163	-.0138	.1001	-.0035	-.0056
	0.60	13.84	0.00	-0.113	-.1135	-.0110	.0919	-.0032	-.0012
	0.60	15.62	0.00	-0.102	-.1072	-.0086	.0840	-.0028	.0016
	0.60	17.45	0.00	-0.089	-.1021	-.0026	.0784	-.0023	.0038
	0.60	19.37	0.00	-0.087	-.0996	.0035	.0765	-.0004	.0098
	0.60	21.28	0.00	-0.075	-.0595	.0050	.0711	.0003	.0125
	0.60	23.20	0.00	-0.070	-.0929	.0120	.0656	.0016	.0152
	0.60	25.11	0.00	-0.064	-.0963	.0093	.0635	.0014	.0180
	0.60	26.88	0.00	-0.059	-.0920	.0163	.0593	.0037	.0240
80	0.90	12.10	0.00	-0.211	-.1037	-.0145	.1544	-.0042	-.0061
	0.90	13.94	0.00	-0.198	-.1035	-.0053	.1480	-.0020	-.0003
	0.90	15.81	0.00	-0.168	-.0979	.0039	.1278	.0006	.0059
	0.90	17.52	0.00	-0.147	-.0981	.0113	.1146	.0013	.0120
	0.90	19.41	0.00	-0.131	-.0969	.0179	.1061	.0031	.0172
	0.90	21.29	0.00	-0.118	-.0959	.0249	.0977	.0046	.0221
	0.90	23.19	0.00	-0.107	-.0940	.0297	.0909	.0052	.0278
	0.90	25.07	0.00	-0.100	-.0953	.0335	.0871	.0059	.0324
	0.90	26.85	0.00	-0.091	-.0957	.0370	.0818	.0066	.0361

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
81	1.50	12.03	0.00	-0.161	-.0781	-.0226	.1358	-.0064	-.0038
	1.50	13.90	0.00	-0.151	-.0749	-.0178	.1295	-.0050	-.0004
	1.50	15.73	0.00	-0.137	-.0717	-.0086	.1206	-.0027	.0050
	1.50	17.61	0.00	-0.117	-.0670	.0037	.1069	.0000	.0120
	1.50	19.47	0.00	-0.105	-.0615	.0143	.0962	.0018	.0166
	1.50	21.31	0.00	-0.099	-.0610	.0180	.0906	.0027	.0196
	1.50	23.17	0.00	-0.090	-.0593	.0226	.0838	.0041	.0237
	1.50	25.01	0.00	-0.084	-.0613	.0277	.0802	.0051	.0285
	1.50	26.76	0.00	-0.082	-.0609	.0327	.0781	.0061	.0340
82	0.60	12.02	0.00	-0.447	-.1175	-.0575	.1758	-.0078	-.0120
	0.60	13.97	0.00	-0.433	-.1173	-.0490	.1742	-.0092	-.0129
	0.60	15.75	0.00	-0.417	-.1178	-.0415	.1699	-.0106	-.0113
	0.60	17.70	0.00	-0.401	-.1230	-.0323	.1668	-.0113	-.0091
	0.60	19.62	0.00	-0.380	-.1254	-.0152	.1613	-.0095	-.0039
	0.60	21.54	0.00	-0.367	-.1286	.0025	.1554	-.0091	.0011
	0.60	23.47	0.00	-0.342	-.1310	.0174	.1466	-.0086	.0091
	0.68	25.39	0.00	-0.321	-.1279	.0321	.1406	-.0097	.0154
83	0.90	11.99	0.00	-0.603	-.0958	-.0324	.2406	-.0046	.0002
	0.90	13.88	0.00	-0.592	-.0970	-.0164	.2449	-.0038	.0022
	0.90	15.67	0.00	-0.569	-.1021	-.0120	.2452	-.0055	.0005
	0.90	17.42	0.00	-0.544	-.1071	-.0079	.2433	-.0082	-.0003
	0.90	19.15	0.00	-0.524	-.1129	.0037	.2400	-.0097	.0003
	0.90	20.87	0.00	-0.500	-.1227	.0208	.2360	-.0112	.0054
	0.90	22.70	0.00	-0.477	-.1274	.0349	.2288	-.0115	.0128
	0.90	24.62	0.00	-0.460	-.1332	.0558	.2270	-.0122	.0214
	0.90	26.42	0.00	-0.438	-.1353	.0722	.2226	-.0101	.0288
84	1.50	12.02	0.00	-0.657	-.0782	-.0535	.3299	-.0056	-.0158
	1.50	13.88	0.00	-0.638	-.0837	-.0397	.3275	-.0055	-.0113
	1.50	15.74	0.00	-0.611	-.0905	-.0235	.3233	-.0049	-.0064
	1.50	17.45	0.00	-0.585	-.0932	-.0102	.3177	-.0040	-.0030
	1.50	19.35	0.00	-0.540	-.0975	.0003	.3066	-.0055	.0006
	1.50	21.24	0.00	-0.512	-.0926	.0192	.2943	-.0045	.0075
	1.50	23.14	0.00	-0.493	-.0873	.0373	.2843	-.0024	.0162
	1.50	25.02	0.00	-0.471	-.0854	.0535	.2741	-.0011	.0253
	1.50	26.78	0.00	-0.452	-.0865	.0665	.2661	-.0006	.0332

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
85	0.60	17.00	-3.87	-0.439	-.1163	.0227	.1728	-.0078	.0046
	0.60	17.00	-2.07	-0.434	-.1095	-.0074	.1730	-.0093	-.0035
	0.60	17.00	-0.17	-0.415	-.1139	-.0485	.1704	-.0137	-.0153
	0.60	17.00	1.74	-0.381	-.1125	-.0716	.1636	-.0105	-.0219
	0.60	17.00	3.64	-0.389	-.1171	-.1010	.1716	-.0074	-.0306
	0.60	17.00	5.55	-0.389	-.1178	-.1308	.1739	-.0083	-.0367
	0.60	17.00	7.45	-0.367	-.1112	-.1550	.1709	-.0117	-.0484
	0.60	17.00	9.32	-0.359	-.1152	-.1934	.1712	-.0128	-.0618
86	0.90	17.00	-4.02	-0.613	-.1009	.0158	.2509	-.0091	.0033
	0.90	17.00	-2.16	-0.576	-.1048	-.0007	.2459	-.0080	.0002
	0.90	17.00	-0.45	-0.542	-.1086	-.0286	.2407	-.0091	-.0079
	0.90	17.00	1.47	-0.510	-.1162	-.0777	.2401	-.0109	-.0213
	0.90	17.00	3.36	-0.522	-.1216	-.1287	.2512	-.0143	-.0363
	0.90	17.00	5.27	-0.522	-.1227	-.1690	.2596	-.0172	-.0451
	0.90	17.00	7.17	-0.499	-.1387	-.2300	.2626	-.0262	-.0648
	0.90	17.00	9.05	-0.485	-.1384	-.2822	.2545	-.0299	-.0801
87	1.50	17.00	-4.07	-0.598	-.0903	.0514	.3141	.0014	.0216
	1.50	17.00	-2.21	-0.601	-.0921	.0135	.3183	-.0023	.0068
	1.50	17.00	-0.50	-0.590	-.0943	-.0156	.3195	-.0044	-.0048
	1.50	17.00	1.22	-0.580	-.0898	-.0587	.3178	-.0057	-.0199
	1.50	17.00	3.03	-0.578	-.0883	-.0929	.3165	-.0090	-.0310
	1.50	17.00	4.94	-0.563	-.0893	-.1215	.3157	-.0140	-.0453
	1.50	17.00	6.83	-0.548	-.0905	-.1521	.3128	-.0169	-.0626
	1.50	17.00	8.69	-0.539	-.0893	-.1872	.3061	-.0167	-.0792
88	0.60	11.97	0.00	-0.841	-.1467	-.0693	.1460	-.0177	-.0113
	0.60	13.79	0.00	-0.825	-.1561	-.0574	.1462	-.0124	-.0118
	0.60	15.58	0.00	-0.816	-.1580	-.0340	.1487	-.0082	-.0074
	0.60	17.53	0.00	-0.807	-.1619	-.0086	.1515	-.0016	-.0061
	0.60	19.46	0.00	-0.798	-.1659	.0057	.1523	.0004	-.0068
	0.60	21.38	0.00	-0.785	-.1638	.0212	.1513	.0055	-.0089
	0.60	23.31	0.00	-0.782	-.1536	.0365	.1493	.0119	-.0126
	0.60	25.22	0.00	-0.766	-.1470	.0370	.1488	.0142	-.0206

Run	M	α	β	C_X	C_Z	C_Y	C_m	C	C_l
89	0.90	12.24	0.00	-1.065	-.1462	-.0470	.2165	-.0065	-.0098
	0.90	14.06	0.00	-1.050	-.1469	-.0356	.2193	-.0007	-.0134
	0.90	15.85	0.00	-1.037	-.1448	-.0113	.2225	.0062	-.0148
	0.90	17.72	0.00	-1.026	-.1456	.0272	.2271	.0135	-.0005
	0.90	19.52	0.00	-1.017	-.1427	.0600	.2312	.0174	-.0028
	0.90	21.42	0.00	-0.997	-.1379	.0661	.2328	.0207	-.0077
	0.90	23.33	0.00	-0.971	-.1305	.0717	.2317	.0247	-.0112
	0.90	25.25	0.00	-0.960	-.1312	.0935	.2355	.0321	-.0191
	0.90	26.96	0.00	-0.939	-.1278	.1146	.2363	.0377	-.0174
90	1.50	12.10	0.00	-1.172	-.0974	-.0697	.2885	-.0193	-.0032
	1.50	13.93	0.00	-1.135	-.1088	-.0599	.2878	-.0154	-.0053
	1.50	15.77	0.00	-1.099	-.1164	-.0414	.2865	-.0100	-.0063
	1.50	17.67	0.00	-1.058	-.1215	-.0132	.2857	-.0031	-.0055
	1.50	19.54	0.00	-1.016	-.1248	.0171	.2843	.0050	-.0033
	1.50	21.41	0.00	-0.981	-.1230	.0447	.2823	.0113	.0001
	1.50	23.28	0.00	-0.950	-.1219	.0067	.2816	.0168	.0036
	1.50	25.12	0.00	-0.930	-.1154	.0906	.2868	.0232	.0047
	1.50	26.90	0.00	-0.917	-.1087	.1152	.3003	.0294	.0061
91	0.60	17.00	-4.04	-0.811	-.1660	.0607	.1475	.0108	-.0254
	0.60	17.00	-2.17	-0.807	-.1600	.0251	.1477	.0011	-.0109
	0.60	17.00	-0.44	-0.807	-.1519	-.0156	.1497	-.0082	.0009
	0.60	17.00	1.27	-0.803	-.1472	-.0469	.1479	-.0172	.0141
	0.60	17.00	3.09	-0.804	-.1482	-.0527	.1458	-.0238	.0393
	0.60	17.00	5.00	-0.813	-.1439	-.0518	.1465	-.0285	.0659
	0.60	17.00	6.92	-0.814	-.1336	-.0951	.1496	-.0399	.0698
	0.60	17.00	8.83	-0.826	-.1095	-.1814	.1535	-.0583	.0583
	0.60	17.00	8.83	-0.826	-.1095	-.1814	.1535	-.0583	.0583
92	0.90	17.00	-4.10	-1.051	-.1716	.0711	.2310	.0244	-.0204
	0.90	17.00	-2.24	-1.040	-.1520	.0508	.2258	.0181	-.0093
	0.90	17.00	-0.50	-1.028	-.1336	.0017	.2228	.0048	-.0086
	0.90	17.00	1.36	-1.012	-.1249	-.1053	.2183	-.0187	-.0094
	0.90	17.00	3.26	-1.034	-.1141	-.1051	.2183	-.0284	.0152
	0.90	17.00	5.20	-1.055	-.1075	-.1586	.2232	-.0455	.0261
	0.90	17.00	7.14	-1.060	-.0914	-.2216	.2275	-.0638	.0342
	0.90	17.00	9.05	-1.074	-.0924	-.3114	.2331	-.0863	.0290
	0.90	17.00	9.05	-1.074	-.0924	-.3114	.2331	-.0863	.0290

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
93	1.50	17.00	-4.09	-1.099	-.1430	.1099	.3055	.0181	.0110
	1.50	17.00	-2.16	-1.085	-.1275	.0498	.2925	.0062	.0066
	1.50	17.00	-0.37	-1.076	-.1149	-.0222	.2844	-.0058	-.0052
	1.50	17.00	1.43	-1.090	-.1090	-.1096	.2859	-.0228	-.0128
	1.50	17.00	3.22	-1.106	-.1021	-.1841	.2911	-.0401	-.0167
	1.50	17.00	5.01	-1.113	-.1007	-.2610	.2976	-.0591	-.0248
	1.50	17.00	7.00	-1.094	-.0945	-.3593	.2992	-.0784	-.0450
	1.50	17.00	8.99	-1.091	-.0870	-.4816	.3001	-.1066	-.0654
94	0.60	11.93	0.00	-0.902	.0898	-.0218	.0292	-.0092	.0076
	0.60	13.81	0.00	-0.886	.0653	-.0158	.0312	-.0074	.0077
	0.60	15.60	0.00	-0.876	.0416	-.0067	.0336	-.0077	.0112
	0.60	17.43	0.00	-0.869	.0192	-.0018	.0335	-.0109	.0111
	0.60	19.36	0.00	-0.860	-.0010	.0015	.0338	-.0107	.0093
	0.60	21.28	0.00	-0.839	-.0195	.0029	.0352	-.0093	.0078
	0.60	23.21	0.00	-0.820	-.0368	-.0051	.0371	-.0103	-.0017
	0.60	25.12	0.00	-0.806	-.0544	.0162	.0419	-.0035	.0027
	0.60	26.87	0.00	-0.790	-.0620	.0246	.0430	-.0011	.0060
95	0.90	11.88	0.00	-1.215	.1220	-.0294	.0780	-.0149	.0064
	0.90	13.87	0.00	-1.211	.1059	-.0233	.0804	-.0128	.0035
	0.90	15.66	0.00	-1.203	.0849	-.0156	.0856	-.0102	.0049
	0.90	17.60	0.00	-1.186	.0647	-.0090	.0880	-.0085	.0040
	0.90	19.53	0.00	-1.159	.0448	-.0060	.0903	-.0079	.0033
	0.90	21.46	0.00	-1.136	.0150	.0001	.0945	-.0075	.0015
	0.90	23.39	0.00	-1.116	-.0071	.0094	.0989	-.0048	.0012
	0.90	25.30	0.00	-1.090	-.0295	.0202	.1024	-.0030	-.0002
96	1.50	11.94	0.00	-1.373	.0216	-.0445	.2020	-.0147	-.0021
	1.50	13.80	0.00	-1.344	.0016	-.0328	.2060	-.0119	-.0005
	1.50	15.66	0.00	-1.312	-.0184	-.0262	.2080	-.0102	-.0014
	1.50	17.55	0.00	-1.278	-.0368	-.0174	.2097	-.0083	-.0013
	1.50	19.43	0.00	-1.239	-.0552	-.0105	.2088	-.0068	-.0013
	1.50	21.31	0.00	-1.198	-.0754	-.0035	.2073	-.0056	-.0018
	1.50	23.21	0.00	-1.148	-.1011	.0040	.2044	-.0042	-.0022
	1.50	25.05	0.00	-1.099	-.1278	.0135	.2008	-.0026	-.0020
	1.50	26.86	0.00	-1.052	-.1561	.0228	.1980	-.0006	-.0017

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
97	0.60	17.00	-4.02	-0.870	.0290	.0684	.0375	.0136	-.0030
	0.60	17.00	-2.16	-0.877	.0282	.0281	.0351	-.0005	.0064
	0.60	17.00	-0.35	-0.877	.0337	-.0079	.0340	-.0093	.0149
	0.60	17.00	1.37	-0.874	.0285	-.0560	.0334	-.0238	.0154
	0.60	17.00	3.17	-0.870	.0311	-.0980	.0320	-.0364	.0206
	0.60	17.00	5.05	-0.875	.0316	-.1256	.0339	-.0432	.0285
	0.60	17.00	6.85	-0.878	.0297	-.1001	.0394	-.0443	.0548
	0.60	17.00	8.73	-0.877	.0246	-.1057	.0474	-.0481	.0767
98	0.90	17.00	-4.09	-1.170	.0499	.0846	.0914	.0179	-.0017
	0.90	17.00	-2.21	-1.177	.0608	.0338	.0876	.0009	.0027
	0.90	17.00	-0.39	-1.187	.0722	-.0196	.0852	-.0117	.0013
	0.90	17.00	1.35	-1.177	.0716	-.0735	.0870	-.0250	.0068
	0.90	17.00	3.17	-1.165	.0741	-.1236	.0895	-.0409	.0118
	0.90	17.00	5.10	-1.163	.0660	-.1816	.0958	-.0596	.0159
	0.90	17.00	7.02	-1.163	.0547	-.2231	.1045	-.0741	.0349
	0.90	17.00	8.91	-1.158	.0546	-.2536	.1098	-.0883	.0540
99	1.50	17.00	-4.10	-1.312	-.0550	.1052	.2245	.0156	.0027
	1.50	17.00	-2.16	-1.299	-.0390	.0423	.2150	.0029	.0017
	1.50	17.00	-0.37	-1.291	-.0295	-.0181	.2088	-.0085	-.0007
	1.50	17.00	1.42	-1.297	-.0284	-.0858	.2126	-.0209	-.0061
	1.50	17.00	3.19	-1.302	-.0312	-.1498	.2171	-.0345	-.0069
	1.50	17.00	5.07	-1.305	-.0358	-.2226	.2222	-.0511	-.0089
	1.50	17.00	7.04	-1.297	-.0449	-.2973	.2281	-.0701	-.0108
	1.50	17.00	9.00	-1.284	-.0570	-.3814	.2355	-.0907	-.0189
100	0.60	12.01	0.00	-0.903	.1064	-.0191	.0269	-.0088	.0069
	0.60	13.84	0.00	-0.891	.0881	-.0124	.0277	-.0075	.0076
	0.60	15.63	0.00	-0.880	.0664	-.0057	.0292	-.0064	.0085
	0.60	17.39	0.00	-0.874	.0474	-.0031	.0303	-.0073	.0074
	0.60	19.34	0.00	-0.854	.0219	.0032	.0295	-.0100	.0107
	0.60	21.27	0.00	-0.844	.0058	.0063	.0308	-.0094	.0055
	0.60	23.22	0.00	-0.822	-.0165	.0060	.0315	-.0084	.0050
	0.60	25.15	0.00	-0.811	-.0327	.0101	.0373	-.0048	.0026

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
101	0.90	11.91	0.00	-1.213	.1370	-.0178	.0693	-.0128	.0088
	0.90	13.75	0.00	-1.197	.1196	-.0229	.0712	-.0117	.0066
	0.90	15.61	0.00	-1.189	.1028	-.0179	.0747	-.0099	.0031
	0.90	17.33	0.00	-1.177	.0850	-.0126	.0776	-.0089	.0030
	0.90	19.14	0.00	-1.159	.0689	-.0087	.0791	-.0081	.0034
	0.90	21.04	0.00	-1.138	.0426	.0037	.0827	-.0074	.0001
	0.90	22.94	0.00	-1.121	.0218	.0155	.0884	-.0047	.0028
	0.90	24.83	0.00	-1.090	-.0005	.0236	.0899	-.0024	.0013
	0.90	26.63	0.00	-1.069	-.0170	.0253	.0923	-.0009	.0006
102	1.50	11.98	0.00	-1.333	.0010	-.0410	.2042	-.0136	-.0012
	1.50	13.91	0.00	-1.307	-.0209	-.0348	.2093	-.0119	-.0010
	1.50	15.80	0.00	-1.267	-.0463	-.0272	.2113	-.0100	-.0002
	1.50	17.71	0.00	-1.230	-.0698	-.0208	.2132	-.0085	-.0002
	1.50	19.60	0.00	-1.189	-.0960	-.0146	.2136	-.0071	.0000
	1.50	21.52	0.00	-1.145	-.1258	-.0038	.2135	-.0055	.0003
	1.50	23.42	0.00	-1.100	-.1521	.0039	.2108	-.0041	.0013
	1.50	25.29	0.00	-1.060	-.1819	.0068	.2043	-.0037	.0027
103	0.60	17.00	-3.95	-0.872	.0437	.0641	.0346	.0146	-.0052
	0.60	17.00	-2.15	-0.876	.0454	.0291	.0327	.0002	.0061
	0.60	17.00	-0.41	-0.871	.0526	-.0034	.0313	-.0081	.0119
	0.60	17.00	1.35	-0.870	.0510	-.0545	.0291	-.0189	.0117
	0.60	17.00	3.08	-0.869	.0433	-.0887	.0293	-.0331	.0207
	0.60	17.00	4.83	-0.875	.0472	-.1227	.0292	-.0424	.0251
	0.60	17.00	6.76	-0.872	.0483	-.1105	.0325	-.0439	.0532
	0.60	17.00	8.67	-0.881	.0399	-.1099	.0446	-.0508	.0801
104	0.90	17.00	-4.04	-1.170	.0689	.0903	.0819	.0208	-.0006
	0.90	17.00	-2.15	-1.180	.0802	.0358	.0776	.0034	.0037
	0.90	17.00	-0.32	-1.168	.0911	-.0248	.0748	-.0117	.0022
	0.90	17.00	1.62	-1.170	.0925	-.0770	.0762	-.0279	.0082
	0.90	17.00	3.54	-1.163	.0905	-.1367	.0809	-.0451	.0121
	0.90	17.00	5.47	-1.162	.0862	-.1917	.0862	-.0631	.0218
	0.90	17.00	7.39	-1.162	.0843	-.2378	.0929	-.0788	.0360
	0.90	17.00	9.28	-1.157	.0814	-.2861	.0960	-.0962	.0508

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
105	1.50	17.00	-3.96	-1.276	-.0759	.1112	.2245	.0192	.0006
	1.50	17.00	-2.11	-1.259	-.0667	.0424	.2174	.0038	.0005
	1.50	17.00	-0.35	-1.246	-.0593	-.0216	.2125	-.0093	-.0004
	1.50	17.00	1.42	-1.253	-.0572	-.0967	.2158	-.0223	-.0013
	1.50	17.00	3.38	-1.265	-.0570	-.1764	.2199	-.0419	-.0052
	1.50	17.00	5.34	-1.264	-.0645	-.2566	.2235	-.0603	-.0077
	1.50	17.00	7.30	-1.256	-.0770	-.3428	.2288	-.0814	-.0128
	1.50	17.00	9.24	-1.238	-.0865	-.4345	.2327	-.1032	-.0259
106	0.60	12.05	0.00	-0.875	.1005	-.0187	.0263	-.0078	.0091
	0.60	13.92	0.00	-0.870	.0794	-.0156	.0277	-.0072	.0070
	0.60	15.70	0.00	-0.853	.0519	-.0072	.0311	-.0058	.0094
	0.60	17.45	0.00	-0.842	.0255	-.0043	.0327	-.0084	.0091
	0.60	19.18	0.00	-0.834	.0061	-.0024	.0331	-.0102	.0095
	0.60	20.91	0.00	-0.817	-.0150	-.0036	.0342	-.0091	.0086
	0.60	22.74	0.00	-0.795	-.0366	-.0007	.0365	-.0096	.0014
	0.60	24.65	0.00	-0.781	-.0535	.0064	.0425	-.0057	.0036
107	0.90	11.89	0.00	-1.191	.1419	-.0260	.0667	-.0131	.0038
	0.90	13.80	0.00	-1.183	.1224	-.0221	.0695	-.0116	.0036
	0.90	15.67	0.00	-1.169	.0990	-.0160	.0738	-.0099	.0037
	0.90	17.59	0.00	-1.160	.0713	-.0138	.0800	-.0096	.0030
	0.90	19.50	0.00	-1.136	.0482	-.0125	.0820	-.0084	.0032
	0.90	21.40	0.00	-1.108	.0192	-.0052	.0876	-.0088	.0031
	0.90	23.32	0.00	-1.085	-.0071	.0022	.0941	-.0060	.0042
	0.90	25.22	0.00	-1.053	-.0339	.0048	.0976	-.0049	.0044
108	1.50	11.96	0.00	-1.392	-.0010	-.0453	.2096	-.0154	-.0007
	1.50	13.78	0.00	-1.361	-.0256	-.0408	.2143	-.0141	.0000
	1.50	15.66	0.00	-1.326	-.0531	-.0378	.2175	-.0124	-.0023
	1.50	17.48	0.00	-1.292	-.0783	-.0338	.2196	-.0116	-.0026
	1.50	19.30	0.00	-1.259	-.1026	-.0291	.2210	-.0112	-.0020
	1.50	21.10	0.00	-1.221	-.1286	-.0246	.2198	-.0106	-.0018
	1.50	23.01	0.00	-1.178	-.1551	-.0216	.2161	-.0100	-.0019
	1.50	24.89	0.00	-1.138	-.1760	-.0173	.2105	-.0091	-.0011
109	1.50	26.68	0.00	-1.094	-.1952	-.0123	.2043	-.0080	-.0004

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
109	0.60	17.00	-4.00	-0.849	.0306	.0586	.0355	.0139	-.0027
	0.60	17.00	-2.20	-0.856	.0304	.0337	.0341	.0014	.0078
	0.60	17.00	-0.46	-0.854	.0325	-.0040	.0339	-.0100	.0139
	0.60	17.00	1.39	-0.856	.0270	-.0507	.0335	-.0219	.0139
	0.60	17.00	3.31	-0.853	.0253	-.0865	.0322	-.0324	.0199
	0.60	17.00	5.22	-0.848	.0213	-.1230	.0335	-.0433	.0264
	0.60	17.00	7.11	-0.851	.0287	-.1035	.0371	-.0410	.0489
	0.60	17.00	9.00	-0.851	.0228	-.0921	.0436	-.0431	.0703
110	0.90	17.00	-4.00	-1.151	.0664	.0799	.0802	.0162	.0025
	0.90	17.00	-2.17	-1.154	.0719	.0291	.0784	.0012	.0033
	0.90	17.00	-0.40	-1.152	.0819	-.0150	.0764	-.0106	.0023
	0.90	17.00	1.37	-1.149	.0834	-.0639	.0770	-.0225	.0045
	0.90	17.00	3.13	-1.141	.0808	-.1057	.0806	-.0361	.0107
	0.90	17.00	4.99	-1.129	.0765	-.1588	.0840	-.0521	.0137
	0.90	17.00	6.96	-1.122	.0665	-.2091	.0901	-.0685	.0228
	0.90	17.00	8.89	-1.123	.0622	-.2330	.0984	-.0797	.0440
111	1.50	17.00	-3.88	-1.321	-.0378	.0953	.2282	.0118	.0073
	1.50	17.00	-2.01	-1.311	-.0753	.0319	.2214	-.0006	.0051
	1.50	17.00	-0.11	-1.307	-.0701	-.0395	.2195	-.0128	-.0029
	1.50	17.00	1.86	-1.315	-.0746	-.1172	.2247	-.0268	-.0093
	1.50	17.00	3.85	-1.321	-.0867	-.1984	.2311	-.0437	-.0136
	1.50	17.00	5.84	-1.323	-.0919	-.2709	.2335	-.0613	-.0140
	1.50	17.00	7.81	-1.322	-.0918	-.3497	.2348	-.0825	-.0187
	1.50	17.00	9.73	-1.312	-.0948	-.4316	.2376	-.1023	-.0293
112	0.60	11.95	0.00	-0.881	.1071	-.0238	.0256	-.0093	.0062
	0.60	13.77	0.00	-0.872	.0865	-.0179	.0275	-.0068	.0059
	0.60	15.56	0.00	-0.854	.0633	-.0053	.0305	-.0056	.0079
	0.60	17.30	0.00	-0.840	.0377	.0000	.0318	-.0054	.0106
	0.60	19.04	0.00	-0.833	.0116	-.0041	.0317	-.0101	.0092
	0.60	20.76	0.00	-0.812	-.0121	.0034	.0316	-.0105	.0094
	0.60	22.49	0.00	-0.802	-.0265	.0023	.0322	-.0093	.0031
	0.60	24.21	0.00	-0.789	-.0435	-.0001	.0385	-.0076	.0029
	0.60	26.01	0.00	-0.765	-.0639	.0129	.0416	-.0037	.0052

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
113	0.90	11.88	0.00	-1.173	.1508	-.0067	.0601	-.0104	.0106
	0.90	13.84	0.00	-1.160	.1317	-.0166	.0634	-.0113	.0048
	0.90	15.63	0.00	-1.159	.1084	-.0160	.0691	-.0098	.0050
	0.90	17.56	0.00	-1.143	.0845	-.0139	.0727	-.0095	.0022
	0.90	19.48	0.00	-1.121	.0632	-.0098	.0756	-.0088	.0012
	0.90	21.40	0.00	-1.101	.0377	.0063	.0822	-.0070	.0040
	0.90	23.33	0.00	-1.076	.0091	.0053	.0865	-.0052	.0059
	0.90	25.23	0.00	-1.052	-.0179	.0082	.0911	-.0047	.0060
114	1.50	11.97	0.00	-1.401	.0140	-.0384	.2093	-.0145	.0005
	1.50	13.85	0.00	-1.369	-.0097	-.0356	.2128	-.0132	-.0015
	1.50	15.73	0.00	-1.335	-.0322	-.0303	.2143	-.0112	-.0023
	1.50	17.54	0.00	-1.304	-.0533	-.0257	.2153	-.0105	-.0024
	1.50	19.43	0.00	-1.267	-.0735	-.0193	.2141	-.0094	-.0021
	1.50	21.32	0.00	-1.223	-.0908	-.0143	.2100	-.0083	-.0015
	1.50	23.13	0.00	-1.175	-.1063	-.0091	.2043	-.0075	-.0002
	1.50	25.00	0.00	-1.127	-.1206	-.0039	.1972	-.0070	.0003
	1.50	26.79	0.00	-1.077	-.1373	.0015	.1908	-.0060	.0009
115	0.60	17.00	-3.93	-0.849	.0397	.0594	.0351	.0133	-.0024
	0.60	17.00	-2.12	-0.853	.0441	.0247	.0326	.0019	.0069
	0.60	17.00	-0.18	-0.846	.0427	-.0058	.0310	-.0071	.0150
	0.60	17.00	1.76	-0.851	.0471	-.0569	.0286	-.0197	.0125
	0.60	17.00	3.69	-0.850	.0332	-.0951	.0307	-.0355	.0203
	0.60	17.00	5.63	-0.847	.0413	-.1224	.0290	-.0418	.0242
	0.60	17.00	7.55	-0.847	.0371	-.0971	.0346	-.0426	.0540
	0.60	17.00	9.42	-0.848	.0340	-.1036	.0425	-.0469	.0725
116	0.90	17.00	-4.05	-1.141	.0756	.0795	.0749	.0168	.0000
	0.90	17.00	-2.16	-1.146	.0850	.0309	.0718	.0018	.0038
	0.90	17.00	-0.42	-1.141	.0917	-.0197	.0708	-.0104	.0029
	0.90	17.00	1.41	-1.135	.0920	-.0588	.0718	-.0227	.0065
	0.90	17.00	3.33	-1.130	.0921	-.1097	.0749	-.0382	.0134
	0.90	17.00	5.26	-1.122	.0845	-.1683	.0792	-.0548	.0128
	0.90	17.00	7.19	-1.113	.0816	-.2066	.0833	-.0694	.0250
	0.90	17.00	9.09	-1.109	.0769	-.2395	.0903	-.0823	.0438

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
117	1.50	17.00	-3.95	-1.341	-.0611	.1058	.2263	.0151	.0071
	1.50	17.00	-2.10	-1.324	-.0509	.0415	.2180	.0016	.0045
	1.50	17.00	-0.33	-1.320	-.0461	-.0241	.2158	-.0103	-.0020
	1.50	17.00	1.44	-1.327	-.0477	-.0913	.2191	-.0220	-.0077
	1.50	17.00	3.40	-1.337	-.0509	-.1683	.2250	-.0377	-.0127
	1.50	17.00	5.36	-1.339	-.0542	-.2396	.2272	-.0546	-.0121
	1.50	17.00	7.32	-1.335	-.0555	-.3048	.2310	-.0725	-.0136
	1.50	17.00	9.24	-1.320	-.0647	-.3816	.2354	-.0918	-.0225
118	0.60	12.02	0.00	-0.872	.1202	-.0160	.0222	-.0087	.0066
	0.60	13.84	0.00	-0.858	.1011	-.0102	.0239	-.0075	.0072
	0.60	15.70	0.00	-0.844	.0751	-.0083	.0255	-.0060	.0093
	0.60	17.44	0.00	-0.824	.0512	-.0066	.0278	-.0051	.0078
	0.60	19.35	0.00	-0.816	.0286	.0014	.0287	-.0058	.0079
	0.60	21.26	0.00	-0.799	.0047	.0045	.0277	-.0079	.0064
	0.60	23.19	0.00	-0.782	-.0206	-.0022	.0300	-.0098	.0016
	0.60	25.09	0.00	-0.763	-.0405	.0020	.0348	-.0065	.0011
	0.60	26.86	0.00	-0.749	-.0530	.0132	.0389	-.0026	.0035
119	0.90	11.94	0.00	-1.111	.1601	-.0148	.0489	-.0109	.0082
	0.90	13.80	0.00	-1.113	.1436	-.0144	.0523	-.0095	.0092
	0.90	15.66	0.00	-1.107	.1263	-.0074	.0569	-.0085	.0080
	0.90	17.39	0.00	-1.092	.1067	-.0082	.0600	-.0081	.0011
	0.90	19.19	0.00	-1.086	.0885	-.0063	.0634	-.0071	.0032
	0.90	21.00	0.00	-1.077	.0682	.0091	.0694	-.0050	.0075
	0.90	22.72	0.00	-1.059	.0428	.0115	.0741	-.0049	.0057
	0.90	24.62	0.00	-1.034	.0138	.0102	.0792	-.0046	.0058
	0.90	26.42	0.00	-1.006	-.0098	.0087	.0806	-.0043	.0035
120	1.50	12.24	0.00	-1.349	.0118	-.0326	.2019	-.0117	-.0015
	1.50	14.06	0.00	-1.324	-.0126	-.0301	.2077	-.0109	-.0016
	1.50	15.79	0.00	-1.288	-.0378	-.0254	.2108	-.0097	-.0003
	1.50	17.55	0.00	-1.254	-.0638	-.0226	.2134	-.0094	-.0001
	1.50	19.30	0.00	-1.216	-.0914	-.0182	.2145	-.0086	.0002
	1.50	21.04	0.00	-1.173	-.1190	-.0153	.2129	-.0082	.0004
	1.50	22.99	0.00	-1.139	-.1461	-.0129	.2079	-.0083	.0008
	1.50	24.90	0.00	-1.098	-.1787	-.0092	.2030	-.0077	.0014
	1.50	26.72	0.00	-1.058	-.2132	-.0062	.1938	-.0079	.0033

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C
121	0.60	17.00	-3.94	-0.844	.0518	.0557	.0323	.0139	-.0053
	0.60	17.00	-2.10	-0.839	.0538	.0252	.0295	.0042	.0076
	0.60	17.00	-0.17	-0.834	.0565	-.0091	.0277	-.0074	.0110
	0.60	17.00	1.74	-0.838	.0567	-.0572	.0261	-.0192	.0129
	0.60	17.00	3.65	-0.832	.0465	-.0910	.0276	-.0349	.0228
	0.60	17.00	5.58	-0.833	.0549	-.1138	.0253	-.0408	.0266
	0.60	17.00	7.50	-0.833	.0503	-.0990	.0319	-.0435	.0512
	0.60	17.00	9.37	-0.834	.0384	-.1038	.0405	-.0479	.0731
122	0.90	17.00	-4.04	-1.091	.0925	.0759	.0615	.0149	.0000
	0.90	17.00	-2.31	-1.097	.0999	.0314	.0608	.0024	.0048
	0.90	17.00	-0.35	-1.097	.1081	-.0161	.0597	-.0092	.0042
	0.90	17.00	1.59	-1.089	.1123	-.0563	.0599	-.0222	.0098
	0.90	17.00	3.51	-1.093	.1092	-.1078	.0643	-.0376	.0135
	0.90	17.00	5.45	-1.086	.1024	-.1557	.0695	-.0534	.0177
	0.90	17.00	7.41	-1.076	.0909	-.2059	.0753	-.0686	.0280
	0.90	17.00	9.32	-1.065	.0886	-.2380	.0784	-.0822	.0422
123	1.50	17.00	-3.99	-1.297	-.0626	.1087	.2227	.0188	.0015
	1.50	17.00	-2.14	-1.283	-.0551	.0451	.2174	.0040	.0010
	1.50	17.00	-0.39	-1.267	-.0517	-.0162	.2129	-.0082	.0000
	1.50	17.00	1.37	-1.270	-.0552	-.0880	.2166	-.0216	-.0049
	1.50	17.00	3.21	-1.281	-.0545	-.1554	.2196	-.0372	-.0057
	1.50	17.00	4.97	-1.286	-.0615	-.2241	.2230	-.0524	-.0074
	1.50	17.00	6.81	-1.284	-.0748	-.2942	.2280	-.0701	-.0100
	1.50	17.00	8.73	-1.277	-.0807	-.3777	.2314	-.0901	-.0188
124	0.60	11.92	0.00	-0.853	.1082	-.0323	.0252	-.0101	.0026
	0.60	13.81	0.00	-0.839	.0821	-.0250	.0279	-.0084	.0043
	0.60	15.63	0.00	-0.826	.0567	-.0184	.0298	-.0073	.0055
	0.60	17.38	0.00	-0.817	.0199	-.0152	.0334	-.0107	.0110
	0.60	19.30	0.00	-0.802	-.0113	-.0077	.0366	-.0114	.0092
	0.60	21.23	0.00	-0.787	-.0409	-.0106	.0391	-.0111	.0066
	0.60	23.16	0.00	-0.771	-.0611	-.0108	.0449	-.0094	.0006
	0.60	25.07	0.00	-0.749	-.0788	-.0073	.0485	-.0065	.0032
	0.60	26.84	0.00	-0.714	-.0963	.0051	.0478	-.0064	.0046

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
125	0.90	11.78	0.00	-1.119	.1575	-.0274	.0544	-.0120	.0051
	0.90	13.67	0.00	-1.109	.1373	-.0262	.0585	-.0116	.0028
	0.90	15.47	0.00	-1.092	.1108	-.0218	.0609	-.0096	.0041
	0.90	17.22	0.00	-1.081	.0911	-.0104	.0650	-.0083	.0033
	0.90	19.04	0.00	-1.071	.0686	.0005	.0711	-.0062	.0057
	0.90	20.96	0.00	-1.045	.0407	.0070	.0754	-.0047	.0077
	0.90	22.90	0.00	-1.019	.0079	.0056	.0816	-.0045	.0076
	0.90	24.81	0.00	-0.993	-.0270	.0018	.0882	-.0042	.0054
	0.90	26.64	0.00	-0.959	-.0566	-.0036	.0913	-.0050	.0041
126	1.50	11.70	0.00	-1.382	.0521	-.0231	.1927	-.0097	.0000
	1.50	13.52	0.00	-1.366	.0256	-.0231	.1992	-.0099	-.0009
	1.50	15.34	0.00	-1.345	-.0006	-.0201	.2047	-.0096	-.0001
	1.50	17.21	0.00	-1.306	-.0312	-.0173	.2064	-.0091	-.0003
	1.50	19.17	0.00	-1.269	-.0645	-.0161	.2083	-.0085	-.0006
	1.50	21.13	0.00	-1.227	-.0982	-.0141	.2078	-.0084	-.0003
	1.50	23.08	0.00	-1.182	-.1301	-.0124	.2061	-.0082	.0000
	1.50	25.01	0.00	-1.134	-.1617	-.0142	.2033	-.0086	.0006
	1.50	26.81	0.00	-1.089	-.1951	-.0106	.2004	-.0078	.0015
127	0.60	17.00	-3.98	-0.817	.0350	.0520	.0298	.0133	.0010
	0.60	17.00	-2.18	-0.820	.0363	.0181	.0315	.0013	.0004
	0.60	17.00	-0.25	-0.816	.0294	-.0089	.0327	-.0091	.0123
	0.60	17.00	1.67	-0.823	.0205	-.0480	.0342	-.0228	.0155
	0.60	17.00	3.58	-0.820	.0176	-.0782	.0354	-.0318	.0203
	0.60	17.00	5.51	-0.797	.0173	-.1149	.0330	-.0437	.0288
	0.60	17.00	7.41	-0.796	.0114	-.0952	.0384	-.0459	.0576
	0.60	17.00	9.29	-0.795	.0081	-.1163	.0441	-.0535	.0674
128	0.90	17.00	-4.11	-1.082	.0890	.0550	.0673	.0102	-.0058
	0.90	17.00	-2.24	-1.093	.0988	.0192	.0661	.0005	.0009
	0.90	17.00	-0.50	-1.084	.0968	-.0152	.0651	-.0082	.0014
	0.90	17.00	1.23	-1.085	.0994	-.0394	.0642	-.0166	.0097
	0.90	17.00	2.96	-1.086	.0964	-.0703	.0679	-.0270	.0159
	0.90	17.00	4.79	-1.076	.0965	-.1110	.0702	-.0404	.0188
	0.90	17.00	6.72	-1.061	.0860	-.1493	.0731	-.0524	.0249
	0.90	17.00	8.63	-1.053	.0866	-.1896	.0762	-.0661	.0307

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
129	1.50	17.00	-4.10	-1.336	-.0290	.0879	.2118	.0145	.0011
	1.50	17.00	-2.22	-1.330	-.0233	.0365	.2092	.0022	.0015
	1.50	17.00	-0.21	-1.320	-.0230	-.0214	.2061	-.0099	.0000
	1.50	17.00	1.79	-1.326	-.0249	-.0856	.2093	-.0227	-.0043
	1.50	17.00	3.78	-1.329	-.0266	-.1462	.2106	-.0354	-.0015
	1.50	17.00	5.77	-1.329	-.0316	-.2055	.2124	-.0498	-.0053
	1.50	17.00	7.74	-1.327	-.0390	-.2612	.2146	-.0641	-.0053
	1.50	17.00	9.66	-1.321	-.0434	-.3260	.2175	-.0800	-.0108
130	0.60	12.08	0.00	-0.154	-.1408	-.0119	.1263	-.0037	-.0014
	0.60	13.97	0.00	-0.145	-.1343	-.0027	.1190	-.0023	.0032
	0.60	15.77	0.00	-0.130	-.1287	.0026	.1091	-.0015	.0067
	0.60	17.51	0.00	-0.115	-.1226	.0042	.0983	-.0009	.0068
	0.60	19.25	0.00	-0.105	-.1189	.0079	.0915	.0000	.0096
	0.60	20.97	0.00	-0.097	-.1167	.0103	.0871	.0004	.0117
	0.60	22.72	0.00	-0.092	-.1132	.0124	.0829	.0012	.0142
	0.60	24.46	0.00	-0.085	-.1110	.0156	.0790	.0017	.0165
131	0.60	26.18	0.00	-0.079	-.1089	.0186	.0752	.0026	.0202
	0.90	11.96	0.00	-0.242	-.1353	-.0041	.1881	-.0029	-.0042
	0.90	13.79	0.00	-0.229	-.1246	.0032	.1768	-.0020	.0014
	0.90	15.87	0.00	-0.202	-.1164	.0142	.1571	.0001	.0100
	0.90	17.78	0.00	-0.177	-.1131	.0217	.1412	.0023	.0163
	0.90	19.48	0.00	-0.158	-.1113	.0292	.1287	.0044	.0215
	0.90	21.29	0.00	-0.148	-.1090	.0374	.1224	.0060	.0273
	0.90	23.11	0.00	-0.137	-.1122	.0449	.1159	.0063	.0341
132	0.90	24.81	0.00	-0.128	-.1142	.0484	.1105	.0066	.0383
	0.90	26.64	0.00	-0.119	-.1158	.0493	.1059	.0071	.0407
	1.50	12.10	0.00	-0.177	-.0957	-.0219	.1513	-.0032	-.0122
	1.50	14.00	0.00	-0.167	-.0905	-.0141	.1437	-.0024	-.0055
	1.50	15.78	0.00	-0.149	-.0812	-.0057	.1301	-.0015	.0008
	1.50	17.51	0.00	-0.133	-.0743	.0024	.1179	-.0005	.0066
	1.50	19.24	0.00	-0.120	-.0702	.0105	.1085	.0004	.0120
	1.50	20.98	0.00	-0.114	-.0684	.0163	.1032	.0015	.0167
132	1.50	22.70	0.00	-0.109	-.0682	.0217	.0995	.0027	.0214
	1.50	24.42	0.00	-0.106	-.0680	.0262	.0963	.0039	.0258
	1.50	26.31	0.00	-0.100	-.0667	.0314	.0923	.0051	.0308

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
133	0.60	12.07	0.00	-0.532	-.1405	-.0576	.2179	-.0037	-.0135
	0.60	13.83	0.00	-0.521	-.1377	-.0540	.2158	-.0076	-.0158
	0.60	15.65	0.00	-0.505	-.1404	-.0467	.2138	-.0093	-.0155
	0.60	17.49	0.00	-0.481	-.1463	-.0317	.2109	-.0090	-.0102
	0.60	19.21	0.00	-0.462	-.1496	-.0180	.2056	-.0084	-.0046
	0.60	20.93	0.00	-0.439	-.1517	-.0020	.1969	-.0072	.0014
	0.60	22.66	0.00	-0.418	-.1514	.0102	.1880	-.0068	.0067
	0.60	24.40	0.00	-0.391	-.1507	.0221	.1773	-.0071	.0123
	0.60	26.12	0.00	-0.367	-.1485	.0364	.1672	-.0072	.0180
134	0.90	12.01	0.00	-0.671	-.1393	-.0752	.3002	-.0105	-.0181
	0.90	13.87	0.00	-0.649	-.1376	-.0677	.2974	-.0117	-.0188
	0.90	15.68	0.00	-0.622	-.1382	-.0545	.2930	-.0135	-.0186
	0.90	17.41	0.00	-0.595	-.1466	-.0372	.2894	-.0148	-.0148
	0.90	19.14	0.00	-0.567	-.1591	-.0151	.2864	-.0160	-.0077
	0.90	20.85	0.00	-0.545	-.1648	.0073	.2791	-.0140	.0018
	0.90	22.59	0.00	-0.523	-.1694	.0297	.2707	-.0122	.0118
	0.90	24.32	0.00	-0.499	-.1758	.0487	.2627	-.0111	.0207
	0.90	26.03	0.00	-0.472	-.1806	.0681	.2543	-.0101	.0305
135	1.50	12.09	0.00	-0.705	-.0722	-.1106	.3540	-.0098	-.0444
	1.50	13.90	0.00	-0.673	-.0779	-.0787	.3496	-.0070	-.0360
	1.50	15.68	0.00	-0.630	-.0891	-.0582	.3424	-.0074	-.0288
	1.50	17.40	0.00	-0.589	-.0989	-.0414	.3329	-.0082	-.0206
	1.50	19.12	0.00	-0.552	-.1043	-.0238	.3209	-.0080	-.0136
	1.50	20.84	0.00	-0.533	-.1059	-.0089	.3129	-.0072	-.0061
	1.50	22.56	0.00	-0.507	-.1020	.0093	.2980	-.0065	.0020
	1.50	24.28	0.00	-0.487	-.0990	.0266	.2861	-.0048	.0127
	1.50	26.16	0.00	-0.464	-.0979	.0418	.2713	-.0059	.0231
136	0.60	17.00	-3.99	-0.486	-.1497	.0290	.2098	-.0070	.0118
	0.60	17.00	-2.14	-0.491	-.1434	-.0039	.2130	-.0094	.0007
	0.60	17.00	-0.33	-0.479	-.1445	-.0460	.2108	-.0128	-.0137
	0.60	17.00	1.39	-0.441	-.1450	-.0854	.2002	-.0134	-.0274
	0.60	17.00	3.10	-0.435	-.1536	-.1173	.2037	-.0118	-.0367
	0.60	17.00	4.82	-0.434	-.1554	-.1375	.2062	-.0137	-.0436
	0.60	17.00	6.55	-0.413	-.1586	-.1635	.2004	-.0151	-.0499
	0.60	17.00	8.27	-0.403	-.1591	-.1977	.2008	-.0173	-.0584
	0.60	17.00	10.00	-0.387	-.1519	-.2222	.1960	-.0233	-.0710

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
137	0.90	17.00	-4.00	-0.666	-.1572	.0237	.2972	-.0168	.0061
	0.90	17.00	-2.15	-0.633	-.1571	-.0053	.2958	-.0146	-.0050
	0.90	17.00	-0.33	-0.571	-.1537	-.0501	.2830	-.0153	-.0153
	0.90	17.00	1.39	-0.531	-.1632	-.1220	.2770	-.0187	-.0379
	0.90	17.00	3.10	-0.537	-.1748	-.1676	.2867	-.0223	-.0478
	0.90	17.00	4.83	-0.524	-.1836	-.2115	.2832	-.0295	-.0621
	0.90	17.00	6.56	-0.511	-.1812	-.2527	.2801	-.0341	-.0695
	0.90	17.00	8.27	-0.495	-.1833	-.2927	.2709	-.0391	-.0793
	0.90	17.00	10.04	-0.499	-.1751	-.2953	.2670	-.0382	-.0882
138	1.50	17.00	-4.13	-0.610	-.0885	.0478	.3274	.0010	.0166
	1.50	17.00	-2.14	-0.608	-.0938	.0003	.3354	-.0036	-.0023
	1.50	17.00	-0.43	-0.589	-.0941	-.0400	.3319	-.0077	-.0218
	1.50	17.00	1.28	-0.570	-.0943	-.1008	.3265	-.0083	-.0462
	1.50	17.00	3.00	-0.608	-.0863	-.1399	.3425	-.0136	-.0634
	1.50	17.00	4.73	-0.595	-.0882	-.1819	.3424	-.0199	-.0871
139	0.60	12.03	0.00	-0.903	-.1234	-.0994	.1467	-.0329	.0119
	0.60	13.90	0.00	-0.888	-.1260	-.0703	.1470	-.0265	.0163
	0.60	15.69	0.00	-0.887	-.1327	-.0518	.1512	-.0202	.0151
	0.60	17.42	0.00	-0.877	-.1391	-.0362	.1542	-.0147	.0099
	0.60	19.15	0.00	-0.867	-.1425	-.0160	.1569	-.0085	.0094
	0.60	20.86	0.00	-0.858	-.1452	-.0076	.1596	-.0049	.0066
	0.60	22.58	0.00	-0.843	-.1418	-.0026	.1594	-.0024	.0028
	0.60	24.31	0.00	-0.820	-.1358	.0205	.1574	.0038	.0041
	0.60	26.02	0.00	-0.800	-.1298	.0283	.1567	.0082	-.0020
140	0.90	12.02	0.00	-1.173	-.1434	-.1825	.2515	-.0430	-.0128
	0.90	13.84	0.00	-1.153	-.1405	-.1544	.2508	-.0353	-.0109
	0.90	15.73	0.00	-1.126	-.1344	-.1282	.2498	-.0282	-.0117
	0.90	17.64	0.00	-1.101	-.1293	-.1004	.2506	-.0208	-.0140
	0.90	19.44	0.00	-1.071	-.1243	-.0605	.2465	-.0129	-.0105
	0.90	21.15	0.00	-1.037	-.1212	-.0109	.2421	-.0033	-.0024
	0.90	22.98	0.00	-1.020	-.1276	.0253	.2489	.0048	.0000
	0.90	24.68	0.00	-1.008	-.1313	.0571	.2555	.0139	.0017
	0.90	26.57	0.00	-0.980	-.1338	.0845	.2576	.0209	.0042

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
141	1.50	12.02	0.00	-1.202	-.0640	-.2583	.2884	-.0533	-.0374
	1.50	13.94	0.00	-1.177	-.0685	-.2233	.2900	-.0433	-.0372
	1.50	15.82	0.00	-1.147	-.0719	-.1878	.2899	-.0336	-.0365
	1.50	17.65	0.00	-1.114	-.0716	-.1586	.2903	-.0257	-.0354
	1.50	19.37	0.00	-1.082	-.0706	-.1264	.2920	-.0177	-.0321
	1.50	21.08	0.00	-1.049	-.0662	-.0880	.2958	-.0102	-.0265
	1.50	22.80	0.00	-1.018	-.0666	-.0517	.3027	-.0049	-.0208
	1.50	24.52	0.00	-0.985	-.0699	-.0199	.3106	-.0015	-.0159
	1.50	26.42	0.00	-0.942	-.0798	.0208	.3163	.0048	-.0086
142	0.60	17.00	-4.00	-0.898	-.1869	-.0350	.1735	-.0046	-.0322
	0.60	17.00	-2.14	-0.872	-.1734	-.0327	.1596	-.0084	-.0051
	0.60	17.00	-0.32	-0.854	-.1591	-.0351	.1552	-.0141	.0156
	0.60	17.00	1.44	-0.837	-.1528	-.0707	.1533	-.0273	.0310
	0.60	17.00	3.19	-0.856	-.1507	-.1206	.1556	-.0395	.0383
	0.60	17.00	4.93	-0.864	-.1562	-.1259	.1591	-.0451	.0613
	0.60	17.00	6.69	-0.871	-.1496	-.1567	.1642	-.0555	.0670
	0.60	17.00	8.44	-0.871	-.1353	-.2149	.1652	-.0698	.0596
	0.60	17.00	10.12	-0.857	-.1242	-.2718	.1651	-.0786	.0493
143	0.90	17.00	-4.06	-1.169	-.2028	-.0066	.2755	.0049	-.0211
	0.90	17.00	-2.19	-1.122	-.1636	-.0505	.2586	-.0061	-.0155
	0.90	17.00	-0.36	-1.079	-.1330	-.0979	.2444	-.0213	-.0077
	0.90	17.00	1.39	-1.064	-.1119	-.1406	.2383	-.0366	-.0003
	0.90	17.00	3.15	-1.042	-.0949	-.1884	.2248	-.0508	.0037
	0.90	17.00	4.89	-1.041	-.0904	-.2245	.2232	-.0632	.0149
	0.90	17.00	6.65	-1.042	-.0843	-.2796	.2237	-.0808	.0206
	0.90	17.00	8.39	-1.043	-.0827	-.3441	.2245	-.0958	.0155
	0.90	17.00	10.10	-1.048	-.0891	-.4120	.2305	-.1109	.0111
144	1.50	17.00	-4.14	-1.081	-.1089	.0045	.2965	.0080	-.0097
	1.50	17.00	-2.19	-1.101	-.1000	-.0691	.2923	-.0022	-.0240
	1.50	17.00	-0.41	-1.121	-.0777	-.1501	.2908	-.0233	-.0333
	1.50	17.00	1.50	-1.121	-.0615	-.2408	.2881	-.0467	-.0446
	1.50	17.00	3.28	-1.119	-.0597	-.3201	.2882	-.0658	-.0579
	1.50	17.00	5.06	-1.125	-.0611	-.3911	.2892	-.0796	-.0753

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
145	0.60	11.89	0.00	-0.946	.1620	-.0108	.0178	-.0264	.0423
	0.60	13.89	0.00	-0.931	.1298	-.0459	.0207	-.0259	.0199
	0.60	15.79	0.00	-0.917	.0985	-.0548	.0242	-.0241	.0122
	0.60	17.53	0.00	-0.901	.0750	-.0480	.0265	-.0215	.0094
	0.60	19.28	0.00	-0.877	.0397	-.0358	.0280	-.0216	.0174
	0.60	21.00	0.00	-0.861	.0146	-.0280	.0315	-.0190	.0166
	0.60	22.75	0.00	-0.842	-.0098	-.0289	.0363	-.0173	.0104
	0.60	24.48	0.00	-0.831	-.0326	-.0189	.0452	-.0130	.0108
	0.60	26.28	0.00	-0.816	-.0581	-.0150	.0546	-.0109	.0109
146	0.90	11.79	0.00	-1.216	.2009	-.0673	.0465	-.0397	.0247
	0.90	13.62	0.00	-1.178	.1761	-.0873	.0470	-.0417	.0143
	0.90	15.70	0.00	-1.180	.1565	-.0894	.0520	-.0410	.0127
	0.90	17.43	0.00	-1.191	.1334	-.0886	.0602	-.0400	.0172
	0.90	19.16	0.00	-1.184	.1082	-.0870	.0681	-.0391	.0175
	0.90	20.89	0.00	-1.166	.0806	-.0773	.0737	-.0359	.0201
	0.90	22.64	0.00	-1.146	.0503	-.0769	.0826	-.0344	.0185
	0.90	24.38	0.00	-1.124	.0138	-.0820	.0923	-.0317	.0133
	0.90	26.19	0.00	-1.090	-.0242	-.0855	.1006	-.0275	.0065
147	1.50	11.74	0.00	-1.430	.0525	-.2847	.2004	-.0644	-.0310
	1.50	13.60	0.00	-1.414	.0246	-.2851	.2043	-.0647	-.0321
	1.50	15.42	0.00	-1.399	-.0055	-.2868	.2097	-.0647	-.0349
	1.50	17.18	0.00	-1.377	-.0354	-.2843	.2148	-.0636	-.0371
	1.50	18.93	0.00	-1.352	-.0651	-.2828	.2201	-.0615	-.0397
	1.50	20.69	0.00	-1.320	-.0999	-.2761	.2260	-.0574	-.0411
	1.50	22.47	0.00	-1.284	-.1364	-.2612	.2323	-.0519	-.0414
	1.50	24.22	0.00	-1.244	-.1696	-.2467	.2363	-.0462	-.0433
	1.50	26.17	0.00	-1.196	-.2034	-.2296	.2377	-.0411	-.0454
148	0.60	17.00	-4.00	-0.923	.0797	-.0047	.0317	-.0057	-.0021
	0.60	17.00	-2.11	-0.922	.0825	-.0292	.0301	-.0142	.0030
	0.60	17.00	-0.25	-0.914	.0832	-.0618	.0293	-.0233	.0056
	0.60	17.00	1.51	-0.902	.0812	-.0748	.0287	-.0289	.0128
	0.60	17.00	3.27	-0.888	.0882	-.0955	.0253	-.0369	.0220
	0.60	17.00	5.04	-0.878	.0907	-.1088	.0249	-.0431	.0288
	0.60	17.00	6.81	-0.872	.0925	-.1314	.0251	-.0511	.0329
	0.60	17.00	8.58	-0.868	.0934	-.1497	.0268	-.0589	.0385

Run	M	α	β	C_X	C_Z	C_Y	C_m	C_n	C_l
149	0.90	17.00	-4.00	-1.238	.1236	-.0226	.0696	-.0184	.0047
	0.90	17.00	-2.04	-1.216	.1358	-.0593	.0630	-.0300	.0082
	0.90	17.00	-0.11	-1.186	.1453	-.0827	.0574	-.0394	.0150
	0.90	17.00	1.61	-1.172	.1519	-.1007	.0532	-.0474	.0251
	0.90	17.00	3.34	-1.165	.1564	-.1297	.0548	-.0583	.0295
	0.90	17.00	5.07	-1.152	.1580	-.1598	.0557	-.0690	.0348
	0.90	17.00	6.81	-1.127	.1562	-.1859	.0578	-.0783	.0387
	0.90	17.00	8.54	-1.120	.1546	-.2136	.0616	-.0879	.0444
150	1.50	17.00	-3.83	-1.368	-.0207	-.1323	.2064	-.0290	-.0201
	1.50	17.00	-1.95	-1.378	-.0205	-.2017	.2094	-.0447	-.0279
	1.50	17.00	-0.17	-1.388	-.0203	-.2644	.2122	-.0594	-.0342
	1.50	17.00	1.74	-1.395	-.0187	-.3271	.2150	-.0745	-.0404
	1.50	17.00	3.53	-1.395	-.0154	-.3851	.2174	-.0884	-.0466
	1.50	17.00	5.32	-1.391	-.0130	-.4393	.2192	-.1020	-.0520
	1.50	17.00	7.11	-1.384	-.0107	-.4949	.2209	-.1155	-.0587
	1.50	17.00	8.89	-1.375	-.0094	-.5508	.2212	-.1284	-.0665
	1.50	17.00	10.73	-1.363	-.0068	-.5982	.2210	-.1386	-.0752

REFERENCES

1. G. M. Stone, Tests of a 0.10 Scale Ejection Seat in Proximity to a B-1 Fuselage Forebody in the Rockwell Trisonic Wind Tunnel, Test No. 1 (TWT-300), Rockwell International, B-1 Division, NA-76-549, July 1976.
2. G. M. Stone, Tests of a 0.10 Scale Ejection Seat in Proximity to a B-1 Fuselage Forebody in the Rockwell Trisonic Wind Tunnel, Test No. 2 (TWT-310), Rockwell International, B-1 Division, NA-77-196, May 1977.
3. G. M. Stone, Trisonic Wind Tunnel, User's Manual, Rockwell International, Los Angeles Division, NA-78-258, June 1978.
4. G. R. Casteel, and A. F. Tweedie, Predicted Escape System Performance for B-1 Aircraft No. 4 and Validation of Math Model Using Sted Test Data, Rockwell International, B-1 Division, NA-78-856, November 1978.
5. J. W. Brinkley, and J. T. Saffer, Dynamic Simulation Techniques in the Design of Escape Systems: Current Applications and Future Air Force Requirements, Symposium of Biodynamic Models and Their Applications, AMRL TR-71-29, December 1971, AD# 739501.